CURRICULUM VITAE: Gustavo Deco

Prof. Dr. phil. Dr. rer. nat. habil. Gustavo Deco is Research Professor at the Institució Catalana de Recerca i Estudis Avançats and Full Professor (Catedrático) the Pompeu Fabra University (Barcelona) where he is head of the Computational Neuroscience Group and Director of the Center of Brain and Cognition.

He studied Physics at the National University of Rosario (Argentina) where he received his diploma degree in Theoretical Atomic Physics. In 1987, he received his Ph.D. degree in Physics for his thesis on Relativistic Atomic Collisions. In 1987, he was a post doctoral fellow at the University of Bordeaux in France. In the period from 1988 to 1990, he obtained a post doctoral position of the Alexander von Humboldt Foundation at the University of Giessen in Germany. From 1990 to 2003, he has been with the Neural Computing Section at the Siemens Corporate Research Center in Munich, Germany, where he led the Computational Neuroscience Group. In 1997, he obtained his habilitation (maximal academical degree in Germany) in Computer Science (Dr. rer. nat. habil.) at the Technical University of Munich for his thesis on Neural Learning. In 2001, he received his PhD in Psychology (Dr. phil.) for his thesis on Visual Attention at the Ludwig-Maximilian-University of Munich.

He was lecturer at the universities of Rosario, Frankfurt and Munich. From 1998 to 2001 he was Associate Professor at the Technical University of Munich. Since 1999 he is an Honorary Professor at the University of Rosario, since 2001 Invited Lecturer at the Ludwig-Maximilian-University of Munich, since 2016 Associate Researcher at the Max Planck Institute for Human Cognitive and Brain Science, since 2017 Adjunct Professor of the Faculty of Medicine of Monash University and since 2019 Adjunct Professor, Faculty of Medicine, School of Psychological Sciences and Turner Institute for Brain and Mental Health, Monash University. Since 2001 he is also McDonnell-Pew Visiting Fellow of the Centre for Cognitive Neuroscience at the University of Oxford. In 2001 he was awarded the international prize of Siemens "Inventor of the Year" for his contribution in statistical learning, models of visual perception, and fMRI based diagnosis of neuropsychiatric diseases. His research interests include computational neuroscience, neuropsychology, psycholinguistics, biological networks, statistical formulation of neural networks, and chaos theory.

He has published 4 books, more than 440 papers in International Journals and 36 book chapters. He has also 52 patents in Europe, USA, Canada and Japan. He was awarded an ERC Synergy grant in 2022, an ERC Advanced grant in 2012 and he is member of the Human Brain Project (EU Flagship).

CURRICULUM VITAE: Gustavo Deco

Prof. Dr. Dr. phil. Dr. rer. nat. habil. Gustavo Deco

Private :   Birth Date and Place: 07.11.1961 in Rosario (Argentina)
Marital Status: Married and four sons
Nationality: Italian

Graduates Degrees :
03.79 - 03-83 Diploma in Theoretical Physics
National University of Rosario

Postgraduates Degrees :
04.84 - 06.87 Ph.D in Theoretical Physics.
Ph.D thesis: Atomic Collision at Relativistic High Energies.
National University of Rosario. Note: Summa cum Laude

12.96   Habilitation and PhD in Theoretical Computer Science (Dr. rer.nat. habil.)
(Habilitation is the maximal academical degree in Germany and qualifies for a professorship)
Postdoctoral thesis: Unsupervised Learning and Information Theory:
Parametric and Nonparametric Formulation
Technical University of Munich

05.97 - 07.01 Ph.D in Psychology (Neuropsychology, Dr. phil.).
Ph.D thesis: "The Computational Neuroscience of Visual Attention"
Ludwig-Maximilian-University of Munich. Note: Summa cum Laude.

Research Activities :
04.84 – 03.88 Fellowship from the National Research Council at University of Rosario.
06.87 - 08.87 Post-Doctoral Fellowship at the University of Bordeaux (France)
05.88 - 12.89 Post-Doctoral Fellowship of the *Alexander von Humboldt-Foundation*
University of Gießen (Germany)
01.90 - 06.92 Siemens AG, Unterschleißheim
Real Time Expert Systems and Neural Networks (Spin Glass)
07.92 – 03.03 Siemens AG, Research Corporate
Senior Principal Research Scientist
Neural Networks and Computational Neuroscience
since 09.99   Honorary Professorship at the National University of Rosario
since 09.99   Privat-Dozent at the Technical University of Munich
since 02.01   McDonnell-Pew Visiting Fellow of the Centre for Cognitive Neuroscience of the University of Oxford
since 03.03   Research Professor by Institució Catalana de Recerca i Estudis Avançats (ICREA) at the University Pompeu Fabra.
since 03.08   Full Professor (Catedrático) at the University Pompeu Fabra.
since 07.16   Associate Researcher at the Max Planck Institute for Human Cognitive and Brain Science
since 03.17   Adjunct Professor, Faculty of Medicine, Monash University, Australia
since 01.19   Adjunct Professor, Faculty of Medicine, School of Psychological Sciences and Turner Institute for Brain and Mental Health, Monash University.

Publications: (see list)

      Papers:

                International Reviews: 420

                Chapters in Books: 36

      Books:

                1) "An Information-Theoretic Approach to Neural Computing"
                  G. Deco and D. Obradovic
                  Springer Verlag,, New York 1996.
                2) "Information Dynamics: Foundations and Applications"
                  G. Deco and B. Schürmann
                  Springer Verlag, New York, 2000.
                3) "Computational Neuroscience of Vision"
                  E. Rolls and G. Deco
                  Oxford University Press, Oxford, 2001.
                4) "The Noisy Brain"
                  E. Rolls and G. Deco
                  Oxford University Press, Oxford, 2010.

Patents (see list)**:**   52

Awards: Inventor of the Year 2001 (Siemens world wide competition).

Academic Activities:

03.83-03.88	Teaching Assistant at the National University of Rosario. - Theoretical Mechanic (1983-1984) - Theoretical Electrodynamic (1985-1986) - Quantum mechanic (1987-1988)
04.1994	Invited Professor at the National University of Rosario. - Introduction to the Theory of Neural Networks.
1994-1995	Teaching Assistant at the University of Frankfurt - Introduction to the Theory of Neural Networks. - Informationdynamics
since 1994	Privat-Dozent at the Technical University of Munich - Information Theory and Neural Network. - Informationdynamics. - Computational Neuroscience.
05.1997	Invited Professor at the National University of Rosario. - Theoretical Computer Science
10.2002	Invited Professor at the University Pompeu Fabra (Barcelona). - Introduction to Computational Neuroscience
since 10.2001	Invited Lecturer at the Ludwig-Maximilians-University Munich. - Computational Neuroscience

2003-2008	Professor at the University Pompeu Fabra (Barcelona). Lectures: - Artifitial Intelligence II (Undergraduates Courses) - Computational Neuroscience (PhD ans Master Courses) - Biomathematics (Master in Bioinformatics, Biology-UPF)
2004-2006	Director of the Doctoral Program in Computer Science and Digital Communication at the University Pompeu Fabra (UPF, Barcelona).
2005	Invited Professor: Computational Neuroscience (PhD Course) - Karolinska Institute, Stockholm (Sweden) - Universidad La Laguna, Almería (Spain)
2006	Invited Professor: Computational Neuroscience (PhD Course) - Universidad La Laguna, Almería (Spain)
2007	Invited Professor: Computational Neuroscience (PhD Course) - Universidad La Laguna, Almería (Spain) - Karolinska Institute, Stockholm (Sweden)
since 2008	Full Professor (Catedrático) at the University Pompeu Fabra (Barcelona). Lectures: - Artifitial Intelligence II (Undergraduates Courses) - Computational Neuroscience (PhD ans Master Courses)
since 2017	Associate Researcher at the Max Planck Institute for Human Cognitive and Brain Science
since 2017	Adjunct Professor, Faculty of Medicine, Monash University, Australia
since 2019	Adjunct Professor, Faculty of Medicine, School of Psychological Sciences and Turner Institute for Brain and Mental Health, Monash University.

Languages :   Spanish, German, English, Catalan.

Research Projects:

- European Project " GALATEA" ESPRIT Project 5293 (1992-1994)
- European Project " Computational Tools and Industrial Applications of Complexity" ESPRIT Project 21042 (1997-1999)
- European Project " ALAVLSI" IST-2001-38099 (2002-2005)
- Siemens AG-Project " Computational Neuroscience" (2003-2006)
- Deutsche ForschungsGemeinschaft (DFG) Germany Ministry, " Attention and Dynamics" (2003-2005)
- Royal Society Project, British Council, Ref. Nr. 15619 (2003-2005)
- Plan Nacional de Investigación Científica (Ministerio de Educación y Ciencia, Spain) " Mechanisms of Multisensory and Temporal Integration in Cognition and Intelligent Systems" (TIN2004-04363-C03-01) (2004-2006)

- European Project " EmCap" " Emergent Cognition Through Active Perception" FP6-2002-IST, 013123-2 (2005-2008)
- European Project " Neural Decision in Motion", FP6-IST-4 (2006-2009)
- Volkswagen-Foundation " Audiovisual Processing of Speech and Non-Speech Oral Gestures" (2006-2009)
- BMBF (German Ministery for Science) " Brain Plasticity and Perceptual Learning: Experimental Analysis and Computational Modeling" (Ref.: 01GW0761) (2008-2010)
- Plan Nacional de Investigación Científica (Ministerio de Educación y Ciencia, Spain) " From Detection to Decision: Neurodynamical Model of Higher Order Cortical Processing" (BFU2007-61710/BFI) (2007-2009)
- Bilingualism and Cognitive Neuroscience. Consolider Ingenio 2010 (Elite-Project of the Ministerio de Educación y Ciencia, Spain) (2008-2012)
- European Project (HEALTH FP7) " BrainSync" " Large Scale Interaction in Brain Networks and their Breakdown in DiseasesBrain" (2008-2010)
- European Marie Curie Training Network, CODDE " Coordination of Optimal Decisions in Dynamical Enviroments" (2008-2011)
- Fundació La Marató TV3. " Estudi de la dinàmica remissió-recaiguda de la depressió major a través de l'anàlisi de xarxa als mapes de connectivitat de Fmri: implicacions per a la teràpia" (2010-2012)
- Plan Nacional de Investigación Científica (Ministerio de Educación y Ciencia, Spain) " Communication and Information Processing Between Cortical Circuits: Oscillations and Plasticity" (2011-2013)
- European Project (FP7), CORONET " Choreographing neural networks: coupling activity dynamics across biomimetic brain interfaces with neuromorphic VLSI" (2011-2014)
- European Project (FP7) BRAINSCALES " Brain-inspired multiscale computation in neuromorphic hybrid systems" (2011-2014)
- James McDonnell Foundation US. Collaborative Awards - Human Cognition " Brain Network Recovery Group Phase II" (2011-2016)
- Advanced ERC Grant European Research Council "DYSTRUCTURE": The Dynamical and Structural Basis of Human Mind Complexity: Segregation and Integration of Information and Processing in the Brain" (2012-2017)
- PCIN-2013-026 Plan Estatal de Fomento de la Investigación Científica y Técnica de Excelencia SEMAINE " Simultaneous MEG or fMRI And INtracranial EEG".ERA-NET-NEURON "SEMAINE" (2013-2016).
- EU H2020 Marie Curie Fellowship, NEUCOD. Adrià Tauste " Information-theoretic approach to infer encoding patterns in a decision making process" (2013-2015)
- EU H2020 Marie Curie Fellowship, INTERACTIONS. Gorka Zamora " Investigation of the interaction between external stimulation and ongoing brain activity in cortical networks: analysis, modeling and empirical corroboration" (2013-2015)
- EU H2020 Marie Curie Training Network, INDIREA " Individualised Diagnostics and Rehabilitation of Attention" (2013-2017)

- EU H2020 Marie Curie Fellowship, eu-msca-629613 CEMNet. Alexandre Hyafyl "A unified framework for Perceptual Inference in Sensory cortices" (2014-2016)
- National Institutes of Heath (US-NIH), "Stroke, Brain Networks and Behavior" (2015-2020)
- European Project (FP7, Flagship), HBP " Human Brain Project" (Ramp-up phase 2013-2016), "Human Brain Project SGA1" (H2020) 2016-2018, "Human Brain Project SGA2" (H2020) 2018-2020, and "Human Brain Project SGA3" (H2020) 2020-2023
- Plan Estatal de I+D+I. Ministerio de Economía y Competitividad " Integrating Connectomics with Brain Activity Mapping" (2014-2016)
- AGAUR, Agencia Gestio Ajuts Universitaris i Recerca Research Group in Cognitive and Computational Neurocience (2014-2016)
- PCIN-2015-079 NSF PIRE "PIRE-Program in Cognitive, Computational and Systems Neuroscience" Plan Estatal de I+D+I. Ministerio de Economía y Competitividad. Acciones de Programación Conjunta Internacional (2015-2017).
- PCIN-2015-127 CHAMPMouse "Charting Multi-areal Visual Perception in the Mouse" Plan Estatal de I+D+I. Ministerio de Economía y Competitividad. Acciones de Programación Conjunta Internacional (2015-2018)
- European Commission H2020 Marie Curie Fellowship, EU-MSCA-656547. NeuArc2Fun Mathew Gilson."Biological neural networks: from structure to function". European Commission, Horizon 2020 Marie Sklodowska-Curie Individual Fellowship: (2016-2018)
- European Marie Curie Fellowship, EU-MSCA-656262. QTMODEM Ignasi Cos " Quantitative Motor Control for Decision Makin", European CommissionHorizon 2020 Marie Sklodowska-Curie Individual Fellowship: I. Cos, (2016-2017)
- European Marie Curie Fellowship, EU-MSCA-661583- CONSCBRAIN "How consciousness is shaped by neuronal network dynamics", European Commission, Horizon 2020 Marie Sklodowska-Curie Individual Fellowship: G. Hahn, (2015-2017)
- Swiss National Science Foundation (SNSF), SYNERGIA "Exploring brain communication pathways by combining diffusion based quantitative structural connectivity and EEG source imaging: application to physiological and epileptic networks" (2016-2020)
- Plan Estatal de I+D+I. Ministerio de Economia y Competitividad "COBRAS Searching for the underlying Complexity of Brain States" (2016-2019)
- Fundació La Marató TV3. "Brain-Connect: Brain Connectivity During Stroke Recovery and Rehabilitation" (2018-2020)
- Flag-ERA "Comparative Investigation of the Cortical Circuits in Mouse, NHP and Human" (2018-2020).
- DFG German Research Foundation "Dynamic Connectome Uderlying Language in the Brain". (2018-2020).
- AGAUR, Catalan Agencia Gestio Ajuts Universitaris i Recerca "Research Group in Cognitive and Computational Neurocience" (2017-2020)

- EU ERDF Operational Program of Catalonia 2014-2020 "CECH The Emerging Brain Cluster" (2019-2021)
- H2020 MSCA-ITN-2019 Innovative Training Networks "euSNN European School of Network Neuroscience" (2019-2021)
- MCIU AEI Proyectos I+D+i 2019 "Awakening: Using Whole Brain Models Perturbational Approaches for Predicting External Stimulation to Force Transitions Between Different States" (2019-2023)
- Australian Research Council "A Comprehensive Framework for Modelling the Human Connectome" (2020-2022)
- The HBP Calls for Expression of Interest for SGA3 Validation and Inference "Netscovery Model-free and model-based inference and validation workflows for causal brain network discovery" (2020-2023)
- The HBP Calls for Epression of Interest for SGA3 Data and models for understanding of consciousness "BRICON Brain Inspired Consciousness" (2020-2023)
- Australian Research Council "Decoding neuronal populations for visually-guided decision and action" (2021-2023)
- H2020-FET Proactive "Neurotwin Digital twins for model-driven non invasive electrical brain stimulation" (2021-2024)
- FLAG-ERA JTC 2021 "Combining model free and model based biomarkers for the consciousness diagnosis" (2021-2024)
- Australian NHMRC "Neuropharmacology of decision-making: causal brain network modelling across species" (2022-2026)
- Horizon Europe EBRAIN-HEALTH „Actionanable Multilevel Health Data (2022-2026)
- Horizon Europe Hyperstim "High-Dimensional Electrical Stimulation for Visual Prosthesis" (2022-2026)
- AGAUR, Catalan Agencia Gestio Ajuts Universitaris i Recerca "Research Group in Cognitive and Computational Neurocience" (2022-2024)
- CHDI Foundation "Whole-Brain Dynamic fMRI Biomarkers for Monitoring the Evolution of Huntington's Disease" (2023-2025)
- Ministry of Science and Innovation, the State Research Agency and the European Regional Development Fund.PID2022-136216NB-I00 MCIN /AEI /10.13039/501100011033 / FEDER, UE. NOn-equilibrium DYNamical analysis of brain functions in health and disease (2023-2026)
- ERC Synergy Grant Nemesis Neurological Mechanisms of Injury, and Sleep-like cellular dynamics (2023-2029)

Supervised Ph.D Thesis :

    - L. Parra, Ph.D in Physics
at the Ludwig-Maximilian University of Munich
- C. Schittenkopf, Ph D in Computer Science
at the Technical University of Munich
- S. Kriebel, Ph D in Computer Science
at the Technical University of Munich
- M. Szabo, Ph.D in Computer Science
at the Technical University of Munich

- N. Galm, PhD in Computer Science
at the Technical University of Munich
- A. Stemme, PhD in Psychology
at the Ludwig-Maximilian University of Munich
- D. Marti, PhD in Computer Science
at the Universitat Pompeu Fabra
- M. Loh, PhD in Computer Science
at the Universitat Pompeu Fabra
- A. Buehlmann, PhD in Computer Science
at the Universitat Pompeu Fabra
- L. Albantakis, PhD in Computer Science
at the Universitat Pompeu Fabra
- J. Cabral, PhD in Computer Science
at the Universitat Pompeu Fabra
- J.P Larsson, PhD in Computer Science
at the Universitat Pompeu Fabra
- A. Insabato in Computer Science
at the Universitat Pompeu Fabra
- P. Theodoni, PhD in Computer Science
at the Universitat Pompeu Fabra
- M. Martinez, PhD in Computer Science
Universitat Pompeu Fabra
- T. Nakagawa, PhD in Computer Science
Universitat Pompeu Fabra
- C. Tornador, PhD in Biology
Universitat Pompeu Fabra
- M. Demirtas, PhD in Computer Science
Universitat Pompeu Fabra.
- R.Ton, PhD in Computer Science
Universitat Pompeu Fabra and University of Amsterdam
- R. Bettinardi, PhD in Computer Science
Universitat Pompeu Fabra
- K. Glomb, PhD in Computer Science
Universitat Pompeu Fabra
-V. Saenger, PhD in Computer Science
Universitat Pompeu Fabra
-B. Jobst, PhD in Computer Science
Universitat Pompeu Fabra
-V. Pallares, PhD in Computer Science
Universitat Pompeu Fabra
-Josephine Cruzat, PhD in Biomedicine
Universitat Pompeu Fabra
- Jessica de Santiago, PhD in Computer Science
Universitat Pompeu Fabra
-Camilo Miguel Signorelli, PhD in Biomedicine
Universitat Pompeu Fabra
-Manel Vila Vidal, PhD in Biomedicine
Universitat Pompeu Fabra
-Ane Lopez, PhD in Biomedicine
Universitat Pompeu Fabra

-Laura Ulysse, PhD in Computer Science
Universitat Pompeu Fabra
-Eleonora DeFilippi PhD in Computer Sciene
Universitat Pompeu Fabra
-Anira Escrichs, PhD in Computer Science
Universitat Pompeu Fabra
-Katerina Capouskova in Biomedicine
Universitat Pompeu Fabra
-David Blair in Computer Science
Universitat Pompeu Fabra

Afiliations:

Member of the Editorial Board of Journal of Physiology Paris
Member of the Editorial Board of Cognitive Neurodynamics
Member of the Editorial Board of eNeuro
Action Editor of Neural Networks
Referee of: Science, Nature Neuroscience, Neuron, PNAS, Physical Review,
    Physical Review Letters, Neural Computation,   PLoS CB, etc.
Member of the European Neural Network Society
Member of the German Society of Neuroscience
Member of the Society for Neuroscience (USA)
Member of the Society for Cognitive Neuroscience (USA)
Member of the International Scientific Advisory Board of the Max-Planck
    Institute for Biological Cybernetics (Tuebingen)
Member of the International Scientific Advisory Board of the Bernstein
    Center Berlin
Member of the International Scientific Advisory Board of the Bernstein
    Center Heidelberg
Member Hamburg Academy of Science

Conferences Organization:

First ESF (European Science Foundation) Workshop on Computational
Neuroscience: Understanding Brain Functions
Barcelona, Spain
June 2005
(see http://final.upf.es/cnscience/)

Symposium „Computational Model on Vision"
(Organizers: L. Wiskott and G. Deco)
at the 31st Göttingen Neurobiology Conference
Göttingen, Germany
March 2007

Brain Connectivity Workshop 2007.
Barcelona, Spain
May 2007
(see http://www.iua.upf.es/recerca/ComputationalNeuroscience/bcw2007)

„Decision-Making in the Brain"

(Organizers: E. Rolls and G. Deco)
at the Autum School in Cognitive Neuroscience
Oxford, United Kingdom
September 2007

Symposium 11: „Computational Approaches to Cortical Functions: From Perception top Action"
(Organizers: A. Compte and G. Deco)
at the XII Congreso Sociedad Española de Neurociencia
Valencia, Spain
September 2007

Workshop on Mathematical Models of Cognitive Architectures CIRM
(Organizers: V. Jirsa and G. Deco)
Marseille, France
December 2011

ESF Exploratory Workshop: Noise in Decision-Making
 (Organizers: G. Deco)
Barcelona, Spain
May 2013
INBIOMEDvision, Bio- Medical-, and Neuro-informatics supporting Neurosciences
 (Organizers: G. Deco)
Barcelona, Spain
July 2012

CNS 2013 Workshop: Metastable Dynamics of Neural Ensembles
(Organizers: G. Deco)
Paris, France
July 2013

CNS 2013 Workshop: Full Brain Network Dynamics
(Organizers: G. Deco)
Paris, France
July 2013

Workshop on "Population models and mean-field approaches to in vivo brain activity states"
(Organizers: A. Destexhe, O. Faugeras, M. Kamps, V. Jirsa and G. Deco).
Paris, France
February 2016

Invited Lectures:

   - "Relativistische Kollisionen"
   Justus-Liebig-Universität Gießen, August 1987,
   Gießen, Germany.
   (Invited by Prof. Dr. W. Scheid)

- "Transinformation und Neuronale Netze"
Ludwig-Maximilian-Universität, August 1993,
Munich, Germany.
(Invited by Dr. R. Hennicker)

- "Unsupervised Boltzmann Machjnes"
Siemens Corporate Research, July 1993,
Princenton, USA.
(Invited by Dr. S. Hanson)

- "Overfitting in Neural Networks"
Tokai University, November 1993,
Tokai, Japan.
(Invited by Prof. Dr. Ryotaro Kamimura)

- "Information Theory and Neural Networks"
Hitachi Laboratories, November 1993,
Hitachi, Japan.
(Invited by Hitachi Corporate Research)

- "Theory of Unsupervised Learning of Nonlinear Processes",
J. W. v. Goethe Universität Frankfurt, December 1994,
Frankfurt, Germany.
(Invited by Prof. Dr. Martienssen)

- "Infomax and Redundancy Minimization Theory",
Technische Universität München, January 1995,
Munich, Germany.
(Invited by Prof. Dr. Van Hemmen)

- "An Information Theoretic Approach to Unsupervised Learning",
Technische Universität München, November 1995,
Munich, Germany.
(Invited by Prof. Dr. W. Brauer)

- "Time Series Analysis and Informationdynamics",
Humboldt Universität Berlin, January 1996,
Berlin, Germany.
(Invited by Prof. Dr. W. Ebeling)

- "Learning Theory: Parametrical and Nonparametrical Formulation",
Technische Universität München, July 1996,
Munich, Germany.
(Invited by Prof. Dr. W. Brauer)

- "An Information Theoretic Approach to Learning",
Ruhr-Universität Bochum, October 1996,
Bochum, Germany.
(Invited by Prof. Dr. W. von Seelen)

- "Learning Theory: Parametrical and Nonparametrical Formulation"
Technische Universität Berlin, November 1996,
Berlin, Germany.
(Invited by Dr. S. Rueger)

- "Informationdynamics and Biomedical Signal Processing",
Universität Würzburg, December 1996,
Würzburg, Germany.
(Invited by Prof. Dr. W. Kinzel)

- "Data Selection in Temporal time Series"
Max-Planck-Institut für Psychologische Forschung, January 1997,
Munich, Germany.
(Invited by Dr. L. Martignon)

- "Informationdynamics"
Max-Planck-Institut für extraterrestrische Physik, January 1998,
Munich, Germany.
(Invited by Dr. H. Atmanspacher)

- "An Information Theoretic Approach to Learning"
Universität Freiburg, January 1998,
Freiburg, Germany.
(Invited by Prof. Dr. B. Nebel)

- "A Neurodynamical Model for Selective Visual Attention"
University of Birmingham, Dept. of Psychology, September 1999,
Birmingham, England.
(Invited by Prof. Dr. G. Humphreys)

- "A Neurodynamical Model for Selective Visual Attention"
Ludwig-Maximilians-University,
Institut für Medizinische Psychologie, December 1999,
Munich, Germany.
(Invited by Prof. Dr. I. Rentschler)

- "A Neurodynamical Model for the Resolution Hypothesis"
Carnegie Mellon University,
Center for the Neural Basis of Cognition, February 2000,
Pittsburgh, USA.
(Invited by Prof. Dr. T. Lee)

- "The Computational Neuroscience of Visual Attention"
Ruhr-Universität Bochum, May 2000,
Bochum, Germany.
(Invited by Prof. Dr. C. von der Malsburg)

- "Biased Competition Mechanisms for Visual Attention in a Multimodular
Neurodynamical System"
Universität Ulm, June 2000,

Ulm, Germany.
(Invited by Prof. Dr. G. Palm)

- "The Computational Neuroscience of Visual Attention"
GMD FIRST, June 2000,
Berlin, Germany.
(Invited by Prof. Dr. K.R. Müller)

- "The Computational Neuroscience of Visual Attention"
Universitätsklinikum "Benjamin Franklin"
Freie Universität Berlin, June 2000,
Berlin, Germany.
(Invited by Dr. G. Curio)

- "Modelling of Active Perception: Neuropsychological Relevance"
University of Birmingham, Dept. of Psychology, August 2000,
Birmingham, England.
(Invited by Prof. Dr. G. Humphreys)

- "The Computational Neuroscience of Visual Attention"
University of Oxford, Dept. of Psychology, September 2000,
Oxford, England.
(Invited by Prof. E.Rolls)

- "Dynamische Systeme: Ein informationstheoretischer Zugang"
Universität Innsbruck, Institut für Mathematik, October 2000,
Innsbruck, Austria.
(Invited by Prof. S. Hellebrand)

- "Neurokognitiven Mechanismen zur aktiven Bildverarbeitung"
Technische Universität München, February 2001,
Munich, Germany.
(Invited by Prof. Dr. J. Eberspächer)

- "The Computational Neuroscience of Visual Attention"
Max-Planck-Institut fuer Hirnforschung, March 2001,
Frankfurt, Germany.
(Invited by Prof. Dr. W. Singer)

- "Neurokognitiven Mechanismen zur aktiven Bildverarbeitung"
Deutsches Zentrum für Luft- und Raumfahrt, March 2001,
Berlin, Germany.
(Invited by Dr. van der Meer)

- "An Interactive Neurodynamical Model of Biased Competition
  for Attentive Object Recognition and Visual Search"
University of Alberta, April 2001,
Edmonton, Canada.
(Invited by Prof. Dr. T. Caelli)

- "The Computational Neuroscience of Visual Attention"
Department of Neurological and Vision Sciences
Section of Physiology, University of Verona, May 2001,
Verona, Italy.
(Invited by Prof. Dr. L. Chelazzi)

- "The Computational Neuroscience of Visual Attention"
 Max-Planck-Institut fuer biologische Kybernetik, May 2001,
Tübingen, Germany.
(Invited by Dr. F. Volker)

- "The Computational Neuroscience of Visual Attention"
Universität Paderborn, July 2001,
Paderborn, Germany.
(Invited by Prof. Dr. H. Grotstollen)

- "Neurodynamical Modeling in Vision"
   Sommer School on "Connectionist Modeling".
University of Oxford, Dept. of Psychology, July 2001,
Oxford, England.
(Invited by Prof. Dr. E. Rolls)

- "The Neurodynamics of Spatial and Object Attention"
2001 Autumm School in Cognitive Neuroscience
McDonnell-Pew and MRC IRC Centres for Cognitive Neuroscience
University of Oxford, September 2001,
Oxford, England.

- "Computational Neuroscience of Vision"
Max-Planck-Institut für extraterrestrische Physik, October 2001,
Munich, Germany.
(Invited by Prof. Morfill)

- "Neurokognitiven Mechanismen zur aktiven Bildverarbeitung"
Universität Innsbruck, Institut für Informatik, October 2001,
Innsbruck, Austria.
(Invited by Prof. S. Hellebrand)

- "Neurokognitiven Mechanismen zur aktiven Bildverarbeitung"
Universität Osnabrück, Fachbereich Mathematik/Informatik, October 2001,
Osnabrück, Germany.
(Invited by Prof. S. Sperschneider)

- "The Computational Neuroscience of Visual Attention"
Universität Lübeck, Institut für Neuroinformatik, Februar 2002,
Lübeck, Germany.
(Invited by Prof. Th. Martinetz)

 - "The Computational Neuroscience of Visual Attention"
Universität München, Medizinische Fakultät (Alzheimer Institut), Februar 2002,

Munich, Germany.
(Invited by Prof. H. Hampel)

- "Neurodynamische Mechanismen der Informationsverarbeitung im visuellen Cortex"
Universität Düsseldorf, Physikalische Fakultät, Juni 2002,
Düsseldorf, Germany.
(Invited by Prof. R. Egger)

- "Neurocortical Mechanisms Underlying Visual Attention"
SISSA / ISAS, Scuola Internazionale Superiore di Studi Avanzati, Juli 2002,
International School for Advanced Studies.
Trieste, Italy.
(Invited by Prof. M. Diamond)

- "Computational Neuroscience of Visual Cognition"
Laboratory of Computational Neuroscience, Oktober 2002,
Ecole Polytechnique Fédérale de Lausanne.
Lausanne, Switzerland.
(Invited by   Prof. M. Gerstner)

- "Computational Neuroscience of Visual Cognition: Attention and Working Memory"
Department of Computer Science, Oktober 2002,
Universitat Pompeu Fabra.
Barcelona, Spain.
(Invited by Prof. V. Lopez)

- "Computational Neuroscience of Visual Cognition: Attention and Working Memory"
Department of Psychology, Oktober 2002,
University of Barcelona.
Barcelona, Spain.
(Invited by Prof. N. Sebastian Galles)

- "Computational Neuroscience of Visual Cognition"
BENEFRI Course 2003,
Neocortical Functions: From Neurons to Behavior, March 2003,
University of Bern.
Bern, Switzerland.
(Invited by Prof. W. Senn)

- "``What" and ``Where" in Visual Working Memory: A Computational Neurodynamical
Perspective for Integrating fMRI and Single-Neuron Data"
Institute of Neuroscience, April 2003,
University of Plymouth.
Plymouth, United Kingdom.
(Invited by Prof. Jochen Braun)

- "The Neurodynamics of Attention, Working Memory and Reward Reversal"
Institute of Neuroinformatics, May 2003,
ETH-University of Zurich.
Zurich, Switzerland.

(Invited by Prof. P. König)

- "Attention, Memory and Reward Learning: A Computational Neuroscience Perspective"
2003 Autumm School in Cognitive Neuroscience
McDonnell-Pew and MRC IRC Centres for Cognitive Neuroscience
University of Oxford, October 2003,
Oxford, England.
(Invited by Prof. E. Rolls)

- "The Computational Neuroscience of Visual Cognition"
EPSRC Research Cluster in Brain-Inspired Computation
Finnstown Center, October 2003,
Dublin, Ireland.
(Invited by Prof. M. Deham)

- "Neural and Cortical Modeling of Visual Attention, Memory and Reward Learning"
Gemeinsames Forschungs-Kolloqium „Allgemine und Experimentelle Psychologie"
Max-Planck- Instituts für Psychologische Forschung und
Ludwig-Maximiliams-Universität München, November 2003,
Munich, Germany.
(Invited by Prof. H. Müller)

- " Neural and Cortical Modeling of Visual Attention, Memory and Reward Learning"
Instituto de Neurociencia
Universidad Miguel Hernandez, November 2003,
Alicante, Spain.
(Invited by Prof. M. Sanchez-Vives)

- " Neural and Cortical Modeling of Visual Attention, Memory and Reward Learning "
Escuela Superior Politecnicca
Universidad Autonoma de Madrid, November 2003,
Madrid, Spain.
(Invited by Prof. E. Serrano)

-"Neurodynamical Competition and Cooperation in Cortical Networks: From Spiking Neurons to Cognition "
Institut for Theoretical Biology
Humboldt-Universität zu Berlin, June 2004,
Berlin, Germany.
(Invited by Prof. A. Herz)

- "Neurodynamical Competition and Cooperation in Cortical Networks "
Department of Computer Science
University of Helsinki, December 2004
Helsinki, Finnland.
(Invited by Prof . A. Hyvärinen)

- "Computational Neuroscience of Visual Cognition I - II"
Departamento de Física y Departamento de Psicologia
Universidad de las Islas Baleares, February 2005,

Palma de Mallorca, Spain.
(Invited by Prof. C. Mirasso)

- "Neural Mechanisms Underlying a Decion-Making Task"
Department of Psychology
University of Oxford, February 2005,
Oxford, United Kingdom.
(Invited by Prof. E. Rolls)

- "Theories of the Cerebral Cortex"
Department of Neuroscience, Division of Brain Research
Karolinska Institute, May 2005
Stockholm, Sweden.
(Invited by Prof. P. Roland)

- "The Computational Neuroscience of Visual Cognition"
Department of Psychology
Universidad de Almería, May 2005
Almería, Spain.
(Invited by Prof. J. Ortells)

- "Competition an Cooperation in Cortical Networks"
Fundación Duques de Soria, Seminario de Neurociencias, July 2006
„Brain Mechanisms of Attention: Biological and Computational Approaches"
Soria, Spain.
(Invited by Prof. C. Belmonte)

- "The Neurophysiology of Decision-Making"
Centre de Recherche Cerveau et Cognition
Universitè Paul Sabatier, and CNRS, May 2006
Toulouse, France.
(Invited by Prof. S. Thorpe)

- "Neurodynamical Mechanisms Underlying Probabilistic Aspects of Decision-Making:
   Weber's Law"
Kognitionsbiologie
Otto-von-Guericke-Universität Magdeburg, November 2006
Magdeburg, Germany.
(Invited by Prof. J. Braun)

- "The Neurophysiology of Decision-Making"
Ruhr-Universität Bochum, January 2007,
Bochum, Germany.
(Invited by Prof. G. Schoener)

- "Neuronal and Cortical Mechanisms Underlying Decision-Making"
Max-Planck Institute for Biological Cybernetics, October 2007,
Tübingen, Germany.
 (Invited by Prof. N. Logothetis)

- "The Neuronal Basis of Decision-Making and Perception"
Universitätsklinikums Hamburg-Eppendorf, October 2008,
Hamburg, Germany.
 (Invited by Prof. A. Engel)

- "Neurodynamical Mechanisms Underlying Decision-Making"
Harvard University, November 2009,
Boston, USA.
 (Invited by Prof. G. Kreiter)

- "The Intrinsic properties of the Brain"
Brain and Mind Center, École polytechnique fédérale de Lausanne, February 2010,
Laussane, Switzerland.
 (Invited by Prof. W. Gerstner)

- "Stochastics Dynamics in Decision-Making"
Universite Paris Descartes, March 2010,
Paris, France.
 (Invited by Prof. P. Mamassian)

- "The Intrinsic Properties of the Brain: The Resting State"
Forschungszentrum Jülich, May 2010,
Jülich, Germany.
 (Invited by Prof. G. Fink)

- "The Resting State of the Brain"
Columbia University, September 2010,
New York, USA.
 (Invited by Prof. S. Fusi)

- "Stochastic Dynamics and Ongoing Brain Activity"
New York University, September 2010,
New York, USA.
 (Invited by Prof. N. Rubin)

- "The Resting State of the Brain: A Mechanistic View"
Oxford University, Dept. Of Psychiatry, September 2010,
Oxford, United Kingdom.
 (Invited by Prof. M. Kringelbach)

-"Ongoing Cortical Activity at Rest: The Global Attractor Structure of the Brain"
Instituto de Medicina Gamma. December 2011,
Rosario, Argentina

-"Ongoing Cortical Activity at Rest: The Global Attractor Structure of the Brain"
Universidad Autonoma de Madrid. Facultad de Medicina, January 2012,
Madrid, Spain.

-"Ongoing Cortical Activity at Rest: The Global Attractor Structure of the Brain"
Institute of Bioengineering of Catalonia, March 2012,

Barcelona, Spain.

-"Ongoing Cortical Activity at Rest: The Global Attractor Structure of the Brain"
Universidad de Salamanca - Instituto de Neurociencias, March 2012,
Salamanca, Spain.

-"A Resting Brain never Rests"
Free University of Amsterdam. Netherlands, September 2012,
Amsterdam, Netherlands

-"A Resting Brain never Rests"
Hospital del Mar. Univeristat Pompeu Fabra, October 2012,
Barcelona, Spain

-"The Resting Brain Never Rests"
Institut f. Neuro- und Bioinformatik, University of Luebeck, October 2012,
Luebeck, Germany

-"The Resting Brain Never Rests: Dynamics and structure of Global Spontaneous Brain Activity"
Forschungszentrum Jülich - Dept of Neuroscience. January 2013,
Jülich, Germany

-"The Importance of Being Balanced"
Dept. of Psychiatry- University of Cambridge, March 2013,
Cambridge, United Kindom

-"The Importance of Being Balanced: How to Introduce Spontaneous Inter-Area Correlations Properly"
Bernstein Center for Computational Neuroscience, July 2013,
Munich, Germany

- "Linking the Functional and Structural Human Connectome"
Max-Planck Institute for Human Cognitive and Brain Sciences, January 2014,
Leipzig, Germany

- "The human connectome: linking structure and function"
University Medical Center Hamburg-Eppendorf, March 2014,
Hamburg, Germany

- "Linking the Functional and Structural Human Connectome"
Neurospin. France, July 2014,
Paris, France

- " Towards a global model of whole-brain activity: Lessons from the human connectome"
Max-Planck Institute for Human Development Berlin, September 2015,
Berlin, Germany

-"Large-scale mean field models of resting fluctuations"
European Institute for Theoretical Neuroscience. February 2016,

France

-"Whole-Brain Models: Lessons from the Human Connectome"
Institut de Biologie de l'École Normale Supérieure ENS . CNRS. February 2016,
France

-"The effect of deep brain stimulation on brain activity: A computational Perspective
Applying Computational Modeling to Clinical Neuroscience."
The Royal Society. Chicherley Hall. April 2016,
London, United Kingdom

-"Towards Whole Brain Models: New Concepts"
Centro de Neurociencia, March 2017,
Alicante, Spain

-"Towards causal neuroimaging: whole-brain dynamics and modelling"
Invited talk Universitaet Klinik Eppendorf, Jun, 2019,
Hamburg, Germany

-"Turbulence-like Dynamics in Human Brain Activity"
Invited talk Neurosciences Seminar Series School of Behavioural and Brain Sciences The
University of Texas at Dallas, November, 2020
Dallas USA

- "Awakening: Predicting External Stimulation to Force Transitions Between Different Brain
States"
Invited talk Hertie Institute for Clinical Brain Research University of Tuebingen Germany,
December, 2020
Tuebingen Germany

-"The Turbulent Brain"
Invited talk University California San Fransisco (UCSF), San Fransisco, USA.
February, 2021
USA - United States of America

-"Turbulence in the Brain: Discovering the homogeneous isotropic functional core
organisation of the human brain"
Invited talk Bernstein Center for Computational Neuroscience Berlin, March, 2021
Germany

-"The Turbulent Brain"
Invited talk University of Magderburg, May, 2021
Magderburg, Germany

-"Turbulence Dynamics in the Human Brain"
Invited talk National Brain Research India, May, 2021
Manesar, India

-"The Turbulent Brain"
Invited talk University of Cambridge, UK, July, 2021

Cambridge, United Kingdom

-"The arrow of time in brain dynamics: non-equilibrium in different brain states"
Invited talk Monash University, September, 2021
Melbourne, Australia

-"The Turbulent Brain"
Invited talk University of Leuven, September, 2021
Leuven, Belgium

-"The Turbulent Brain"
Invited talk EUSNN Webinar, October, 2021
Hamburg, Germany

- "The Turbulent Brain"
Invited talk Columbia University, Center for Theoretical Neuroscience, November, 2021
New York, USA

-"Turbulence in Human Brain Dynamics"
Invited talk Adrian Seminar Series University of Cambridge, Jan, 2022
Cambridge, United Kingdom

-„The thermodynamics of mind"
Invite talk Department of Mathematics, Oxford University, 25 May, 2023
UK - United Kingdom

-„Leonardo and the turbulence of Mind"
Invited talk Centre for Eudoaimonia and Human Flourishing, Oxford, 23 May, 2023
Oxford, United Kingdom

-„The Thermodynamics of Mind"
Invited talk University of Barcelona, Mathematical Dept. 11 Apr, 2023
Barcelona, Spain

"Turbulent dynamics based analysis of brain in health and disease".
Invited talk SFB 936 1 Mar, 2023
Hamburg, Germany

Talks in Conferences:

- "Ultrarelativistic Electron Capture in Ion-Atom Collisions"
The XIV International Conference on the Physics of Electronic and Atomic Collisions,
July 1985, Stanford University, USA.

- "Relativistic Effects: CDW Approximations"
IX International Seminar on Ion-Atom Collisions,
July 1985, Flagstaff, Northern Arizona University, USA.

- "Mechanical Charge Exchange Processes in Relativistic Atomic Collisions"
International Seminar on Ion Atom Collisions X,

July 1987, Bad Soden, Germany.

- "Pair Creation as Intermediate Mechanism of Electron Capture"
International Seminar on ion Atom Collisions X,
July 1987, Bad Soden, Germany.

- "Colisiones a Altas Energias con Producción de Pares Electrón-Positrón"
Encuentro Latinoamericano de Fisica Atómica,
August 1988, Brasil.

- "Doppelladungsaustausch im Alpha-Helium Stößen im Hoch-Energiebereich"
X Energiereiche Atomare Stöße Tagung
January 1989, Mittelberg, Austria.

- "First Order Perturbation Calculations of Ionization in Relativistic Collisions"
European Conference of Atomic and Molecular Physics
April 1989, Bordeaux, France.

- "Pair Production in Relativistic Atomic Collisions"
XVI International Conference on Physics of Electronic and Atomic Collisions,
July 1989, New York, USA.

- "Elimination of Overtraining by a Mutual Information Network"
International Conference on Artifitial Neural Network
September 1993, Amsterdam, Netherland.

- "Handwritten Digit Recognition with PCA and RBF"
International Joint Conference on Neural Networks
October 1993, Nagoya, Japan.

- "Self-Organization in Stochastic Neural Networks"
International Joint Conference on Neural Networks
October 1993, Nagoya, Japan.

- "A Stochastic Network with Rotor Neurons"
International Joint Conference on Neural Networks
October 1993, Nagoya, Japan.

- "Lernen von Dynamischen Invarianten von Chaotischen Reihen mit Neuronalen Netzen"
3. Jahrestagung: Chaos ind Strukturbildung,
November 1993, München, Germany.

- "Principal Component Analysis: A Factorial Learning Approach"
International Conference on Artificial Neural Networks
May 1994, Sorrento, Italy.

- "Inherent Information Flow in Chaos",
Dynamics and Control of Physical Systems,
May 1995, Cortona, Italy.

- "Statistical Features Extraction"
Dynamics and Control of Physical Systems,
May 1995, Cortona, Italy.

- "Information Flow in Chaotic Systems"
International Conference on Complexity and Self-Organization,
September 1995, Berlin, Germany.

- "Infomax and Redundancy Minimization in Linear and Non-Linear Architectures"
Interdisciplinary Workshop on Neural Networks,
October 1995, Würzburg, Germany.

- "An Information-Theoretic Approach to Unsupervised Learning"
Workshop on Information Theory and Coding,
December 1995, Vail, USA.

- "Nonparametric Data Selection for Improvement of Parametric Neural Learning:
A Cumulant-Surrogates Method"
International Conference on Artificial Neural Networks,
July 1996, Bochum, Germany.

- "Training Data Selection by Detecting Predictability in Non-Stationary Time Series
by a Surrogate-Cumulant Based Approach"
International Workshop on Neural Networks for Identification, Control, Robotics,
and Signal/Image Processing,
August 1996, Venedig, Italy.

- "Neuronale und informationstheoretische Methoden zur Analyse
nichtlinearer dynamischer Systeme"
2. Cottbuser Workshop: Aspekte Neuronalen Lernens,
October 1996, Cottbus, Germany.

- "Testing Nonlinear Markovian Hypotheses in Dynamical Systems"
Fourth SIAM Conference on Applications of Dynamical Systems
May 1997, Snowbird, Utah, USA.

- "An Information-Theoretic Analysis of Temporal Coding Strategies by Spiking
Central Neurons"
International Conference on Artificial Neural Networks,
October 1997, Lausanne, Swiss.

- "Spatio-Temporal Coding in the Cortex"
Workshop on Neurostatistics and Cell Assemblies,
December 1997, Breckenridge, USA.

- "Nonlinear Dynamics of the Daily Heart Rhythm"
Computational Tools and Industrial Applications of Complexity,
January 1998, Thessaloniki, Greece.

- "A Neuronal Model of Binding and Selective Attention for Visual Search"

5th Neural Computation and Psychology Workshop,
Connectionist Models in Cognitive Neuroscience
September 1998, Birmingham, England.

- "Spatio-Temporal Coding in the Cortex: Information Flow Based Learning in Spiking
 Neural Networks"
Winterschool: Spiking Neurons and Synaptic Plasticity,
December 1998, Berlin, Germany.

- "Nonlinear Markovian Dynamics of the Daily Heart Rhythm"
 Workshop: Computational Tools and Industrial Applications of Complexity,
 February 1999, Moskau, Russia.

- "A Neurodynamical Model of Visual Attention: Feedback Enhancement of Spatial
Resolution"
Workshop on "Visual Selection Mechanims",
December 1999, Breckenridge, USA.

- "Biased Competition Mechanisms for Visual Attention in a Multimodular Neurodynamical
System"
Workshop on "Current Computational Architectures Integrating Neural Networks and
Neuroscience",
August 2000, Durham, England.

- "A Neurodynamical Model of Visual Attention: Feedback Enhancement of Spatial
Resolution in a Hierarchical System"
3. Workshop Dynamische Perzeption
November 2000, Ulm, Germany.

- "The Neurodynamics of Spatial and Object Attention"
International Workshop on "The Mathematical, Computational and Biological Study of
Vision"
November 2001, Oberwolfach, Germany.

- "Neurodynamical Mechanisms Underlying Visual Attention"
II. Sino-German Advanced Workshop in Cognitive neuroscience and Psychology,
April 2002, Munich, Germany.

- "A Neurodynamical Theory of Visual Attention: Comparisons with fMRI- and Single-
Neuron Data"
International Conference on Artificial Neural Networks,
August 2002, Madrid, Spain.

- "Neurodynamical Modeling of Visual Cognition: Attention and Working Memory"
Workshop on System Level Modeling,
November 2002, Columbus (Ohio), USA.

-"Neurodynamische Mechanismen der visuellen Kognition: Aufmerksamkeit und
Arbeitsgedächtnis",
TWK 2003, 6th Perception Conference at Tübingen,

February 2003, Tübingen, Germany.

- "The Neurodynamics of Visual Search",
 Munich Visual Search Symposium,
 June 2003, Holzhausen am Ammersee, Germany.

- "The Role of Attention in Visual Perception: A Computational Neuroscience Model"
The 16th International Conference on Vision Interface,
June 2003, Halifax, Canada.

- "Integrating fMRI and Single-Cell Data of Visual Working Memory"
CNS 2003, The Annual Computational Neuroscience Meeting,
July 2003, Alicante, Spain.

- "The Role of Attention in Vision and Action"
Reinforcement Learning: Dopamine, Attention and Computational Models
April 2004, Amsterdam, The Netherlands.

- "Neurodynamical Competition and Cooperation in Cortical Networks"
New Perspectives on Visual Cortex
April 2004, Tobermory, Isle of Mull, United Kingdom.

- "Learning to Attend Relevant Features in a Categorization Task"
II Workshop on Concepts and Category
June 2004, Barcelona, Spain.

- "The Computational Neuroscience of Visual Cognition: Attention, Memory and Reward",
Plenary Talk, in 2nd International Workshop on Attention and Performance in Computational
Vision, by the Eighth European Conference on Computer Vision
May 2004, Prague, Czech Republic.

- "Neural and Synaptic Dynamics Underlying Cross-modal and Cross-temporal Firing Rate
Activity in Association Cells of the Prefrontal Cortex"
Fifth Meeting of the International Multisensory Research Forum
June 2004, Sitges, Spain.

- "Spiking and Synaptic Mechanisms Underlying Biased Competition and Cooperation in
Attention"
Fourth Forum of European Neuroscience
July 2004, Lisbon, Portugal.

- "Neurodynamical Competition and Cooperation in Cortical Networks: From Spiking
Neurons to Behaviour"
International Workshop on Object Recognition, Attention and Action
August 2004, Kyoto, Japan.

- "Computational Vision"
European Summer School: "Visual Neuroscience: From Spikes to Awareness"
September 2004, Schloss Rauischholzhausen, Germany.

- "The Spiking and Synaptic Basis of fMRI-Signal in the Prefrontal Cortex Associated with Cognitive Flexibility
Brain Functioning: Advances in Magnetic Resonance Imaging
November 2004, Barcelona, Spain.

- "Neurodynamical Mechanisms Underlying Brain Functions"
Knowledge Exploration in Life Science Informatics,
November 2004, Milano, Italy.

- "Dinámica Neuronal, Sináptica y Cortical en Percepción y Cognición Visual"
Imagen y Vision
April 2005, Santiago de Compostela, Spain.

- "A Computational Neuroscience Approach to Visual Cognition"
First Iberian Congress on Perception,
July 2005, Barcelona, Spain.

- "A Computational Neuroscience Approach to Visual Cognition"
International Workshop on Bioinspired Information Processing: Cognitive Modeling and Gaze-Based Communication,
September 2005, Lübeck, Germany.

- "The Role of Fluctuations in Decision-Making"
Second Cajal Winter Conference, Cerebral Cortex: From Development to Cognition
March 2006, Benasque, Spain.

- "A Neurophysiological Model of Decision-Making and Weber's Law"
Experimental Psychology Society, Birmingham Meeting,
April 2006, Birmingham, United Kingdom.

- "Competition and Cooperation Mechanisms in Neural and Cortical Dynamics: Attention, Memory and Decision-Making"
Fifth Brain Connectivity Workshop
May 2006, Sendai, Japan.

- "Fluctuation-driven Neurodynamics: A model of Decision-Making"
Workshop on "Information Theory, Neurobiology and Cognition"
Max-Planck Institute for Mathematics in the Sciences
July 2006, Leipzig, Germany.

- "The Neurodynamics of Visual Search"
50 Años de la Inteligencia Artificial, XVI Escuela de Verano de Informatica, EVI-2006
July 2006, Alabacete, Spain.

- "The Role of Statistical Fluctuations in Probabilistic Decision-Making"
NEUROMATH 06, Conference on Mathematical Neuroscience
August 2006, Andorra.

- "Theoretical Neuroscience"
First Summer School on "Theoretical Neuroscience and Complex Systems"

FIAS: Frankfurt Institute for Advanced Studies
August 2006, Frankfurt, Germany.

- "Computational and Theoretical Neuroscience"
European Summer School: "Visual Neuroscience: From Spikes to Awareness"
September 2006, Schloss Rauischholzhausen, Germany.

- "A Neurophysiological Model of Decision-Making: The Role of Fluctuations in Neurodynamics"
9th Granada Seminar on Computational and Statistical Physics
September 2006, Granada, Spain.

- "Neurodynamical Competition and Cooperation in Cortical Networks: From Spiking Neurons to Behavior"
Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde
DGPPN Kongress
November 2006, Berlin, Germany.

- "A Computational Model of Schizophrenic Symptoms in Attractor Networks"
Deutsche Gesellschaft für Psychiatrie, Psychotherapie und Nervenheilkunde
DGPPN Kongress
November 2006, Berlin, Germany.

- "Competition and Cooperation Cortical Mechanisms in Cognition"
First GOSPEL Workshop on Bioinspired Signal Processing
January 2007, Barcelona, Spain.

- "Neurodynamical Mechanisms Underlying Visual Cognition"
Honda International Workshop: "Creating Brain-Like Intelligence"
February 2007, Frankfurt, Germany.

- "Weber's Law in Decision-Making: Integrating Behavioral Data in Humans with a Neurophysiological Model"
International BBSRC-Workshop: Closing the Gap Between Neurophysiology and Behavior: A Computational Modelling Approach, University of Birmingham.
July 2007, Birmingham, United Kingdom.

- "Neurodinamical Mechanisms Underlying Decision-Making
Nolineal 2007.
June 2007, Ciudad Real, Spain.

- "The Cortical Dynamics Underlying Decision-Making: From Neurons to Behaviour"
Plenary Talk at the International Conference on Artificial Neural Networks, ICANN 2007.September 2007, Porto, Portugal.

- "Neural and Computational Mechanisms Underlying Decision-Making"
Symposium 11, XII Congreso Sociedad Española de Neurociencia, SENC 2007.
September 2007, Valencia, Spain.

- "Neurodynamical Mechanisms Underlying Decision-Making: The Role of Statistical Fluctuations"
XX Congreso de Ecuaciones Diferenciales y Aplicaciones, CEDYA 2007.
September 2007, Sevilla, Spain.

- "Neural and Computational Mechanisms Underlying Decision-Making "
Autumn School in Cognitive Neuroscience, University of Oxford.
September 2007, Oxford, United Kingdom.

- "Zur Bedeutung der "Computational Neuroscience" für die Psychiatrie-Konzepte, Methoden, Modelle"
Symposium XIV : Computational Neuropsychiatry (Orgs. F. Tretter/G. Winterer), AGNP: Arbeitsgemeinschaft für Neuropsychopharmakologie und Pharmacopsychiatrie.
October 2007, Munich, Germany.

- "Stochastic Neurodynamics as a Basic Mechanism for Perception"
Plenary Talk at Coherent Behavior in Neural Networks.
October 2007 Mallorca, Spain.

- "Neurocomputational Models of Neurocommunication"
The Marie Curie School in Neuroscience:
Large-Scale Interactions in Brain Networks and
Their Breakdown in Brain Diseases.
March 2008, Santo Stefano di Sessanio, Italy.

- "The Neurodynamics of Decision Making"
Nolineal 2008.
June 2008, Ciudad Real, Spain.

- "The Neural Basis of Attention: Rate vs. Synchronization Modulation"
Symposium "Neural Correlates of Spatial and Feature-based Attention.
International Graduate School of Neuroscience.
Ruhr-Universität Bochum.
June 2008, Bochum, Germany.

- "Models in Cognitive Neuroscience"
Educational Courses, Human Brain Mapping.
June 2008, Melbourne, Australia.

- "Cortical Dynamics at Rest: The Role of Fluctuations and Delays"
Brain Connectivity Workshop.
June 2008, Sidney, Australia.

- "Computational Neuroscience"
European Summer School: "Visual Neuroscience: From Spikes to Awareness"
September 2008, Schloss Rauischholzhausen, Germany.

- "Computational Neuropsychiatry: Neuronal Fluctuations, Dynamics and Schizophrenia"
ESF Workshop on Computational Disease Modeling.
September 2008, Barcelona, Spain.

- "Computational Modeling"
PENS WICN Summer School Programme.
September 2008, Bangor, United Kingdom.

- "The Intrinsic Properties of the Brain: The Role of Fluctuations During Rest"
Conference francaise de Neurosciences Computationnelles.
October 2008, Marseille, France.

- "Stochastic Dynamics a Principle of Perception"
3rd Toyota CRDL Workshop: Mathematical Methods in Complex Systems.
October 2008, Gemenos, France.

- "Integrating Behavioral Data in Humans with a Neurophysiological Model"
Deutsche Gesellschaft für Psychiatrie, Psychotherapie und
Nervenheilkunde (DGPPN) Kongress.
November 2008, Berlin, Germany.

- "The Intrinsic Properties of the Brain: The Role of Fluctuations During Rest"
Resting State Workshop.
December 2008, Magdeburg, Germany.

- "Stochastic Dynamics as a Principle of Perception and Decision Making"
Plenary Lecture at Neuro-Mechanics, Dynamics and Decision Making.
The James H. Belfer Memorial Symposium Series, Technion.
February 2009, Haifa, Israel.

- "The Neurodynamics of Attention, Memory, and Decision Making "
Advanced Course at the Workshop on Deterministic and Stochastic Modeling in
Computational Neuroscience and Other Biological Topics, Centre de Recerca Matematica.
May 2009, Barcelona, Spain.

- "Stochastic Dynamics as a Principle of Brain Function"
Cognition Workshop at the 31st Annual Meeting of the Cognitive Science Society.
July 2009, Amsterdam, The Netherlands.

- "The Computational Neuroscience of Attention, Memory, and Decision Making"
Plenary Lecture at the Summer Program 2009, RIKEN Brain Science Institute.
July 2009, Tokyo, Japan.

- "Large- Scale Architecture of Visual Perception"
Computational Vision Course (European Training Workshop CODDE)
September 2009, Schloss Rauischholzhausen, Germany.

- "The Neurodynamical Basis of Attention "
Autumn School in Cognitive Neuroscience, University of Oxford.
September 2009, Oxford, United Kingdom.

- "The Intrinsic Properties of the Brain: Resting State"
Symposium II, XIII Congreso Sociedad Española de Neurociencia.

September 2009, Tarragona, Spain.

- "Neurobiological Basis of Attention"
4th Computational Cognitive Neuroscience Conference,
November 2009 Boston, USA.

- "Cortical Models of Brain Dynamics"
"Macroscopic Aspects of Neuronal Activity: VSD, LFP, and Macroscopic Models",
December 2009, Marseille, France.

-"A Computational Neuroscience Approach to Attention, Memory, and Decision-Making"
Plenary Lecture at the 3rd Mediterranean Conference of Neuroscience,
December 2009, Alexandria, Egypt

- "The Intrinsic Properties of the Brain: Resting State"
VI Reunion de la Red Tematica de Neurociencia Cognitiva.
July 2010, Murcia, Spain.

- "Models in Cognitive Neuroscience"
Human Brain Mapping Educational Course:
Dynamics Models in System Neuroscience
June 2010, Barcelona, Spain.

-"Decision-Making and Synaptic Dynamics"
International Workshop: Working memory in Rehovot,
March 2010, Rehovot, Israel.

-"Theoretical Studies of Resting State Activity in the Brain
Workshop on Default Mode network and Resting State, Sant Boi de Llobregat,
June 2010, Barcelona, Spain.

-"Modelling the Role of Local Oscillations in Resting Brain Correlations"
Brain Connectivity Workshop 2010,
June 2010, Berlin, Germany.

-"A Neurocomputational Framework for Understanding the Dynamics and Consequences of
Ongoing Activity"
7th FENS: Forum of European Neuroscience,
July 2010, Amsterdam, The Netherlands.

-"Local Fast Oscillations Can Lead to Slow Brain-Wide Neural Activity Correlations During
Rest",
Second Biennial International Conference on Resting-State Functional Brain Connectivity,
September 2010, Milwaukee, USA.

-"The Intrinsic Properties of the Brain: The Resting State"
Invited lecture at the Bernstein Center Computational Neuroscience Retreat,
October 2010, Heidelberg, Germany.

-"Ongoing Brain Activity During Rest"
Invited lecture at the Symposium on Working Memory and Decision Making,
Université Paris-Descartes
March 2011, Paris, France.

-"Ongoing Brain Activity During Rest: The Global Attractor Structure of the Brain"
Invited keynote lecture at the Computational Neuroscience and Neurotechnology Bernstein
Conference and Neurex Annual Meeting,
October 2011, Freiburg, Germany.

-"Neuronal and Synaptic Mechanisms Underlying Attention"
Invited lecture at the Summer School: Mechanisms of Attention: From Experimental Studies
to Technical Systems Conference and Neurex Annual Meeting,
October 2011, Bielefeld, Germany.

-"Ongoing Neuronal Mechanisms Underlying Attention: Firing Rates, Oscillations, and
Neuropharmacology"
Invited lecture at the Rovereto Attention Wokshop: Attention and Objects,
October 2011, Rovereto, Italy.

-"Ongoing Brain Activity During Rest: The Global Attractor Structure of the Brain"
Invited lecture at the Workshop on Mathematical Models of Cognitive Architectures,
December 2011, Marseille, France.

-"Ongoing Brain Activity During Rest: The Global Attractor Structure of the Brain"
Invited lecture at the International Opening Symposium Multi-Site Communication in the
Brain, University medical Center Hamburg-Eppendorf,
December 2011, Hamburg, Germany.

-"New Approaches for Brain Networks Modelling"
Invited lecture at the Symposium "Complex Systems and Brain Networks" Hanse-
Wissenschaftskolleg Institute of Advanced Studies,
September, 2012, Delmenhorst, Germany.

-"The Resting Brain Never Rests: Structure and Dynamics of the Brain"
Keynote Speaker at the Annual Seminar of Computational Science Research Programme
Academy of Finland,
November 2012, Helsinki, Finland

-"The Importance of Being Balanced"
Oral communication at the ESF Exploratory Workshop: Noise in Decision-Making: Theory
Meets Experiments,
May 2012, Sant Fruitós de Bages, Spain

- "Computational and Theoretical Neuroscience"
European Summer School: "Visual Neuroscience: From Spikes to Awareness"
September 2012, Schloss Rauischholzhausen, Germany.

- "Global Brain Structure and Dynamics: The Resting State"
IBRO FENS Winter School

November 2012, Oetztal, Austria.

-"The Importance of Being Balanced"
Invited talk at the Brain Connectivity Workshop,
June 2013, Vancouver, Canada

-"The dynamical structure of brain fluctuations at rest"
Oral communication at the Organization for the Human Brain Mapping 2013
June 2013, Seattle, United States

-"The link between Structure and Dynamics in Whole Brain Models"
Invited talk at the Workshop: Metastable Dynamics of Neural Ensembles. CNS 2013 Paris
July 2013, Paris, France

-"The importance of being balanced"
Invited talk at the Workshop: Advances in neural mass modeling. CNS 2013 Paris.
July 2013, Paris, France

-"How to model resting and task whole brain activity in a unifying framework?"
Invited talk at the Workshop: Full Brain Network Dynamics. CNS 2013 Paris.
July 2013, Paris, France

- "Attractor Networks and the Dynamics of Visual Perception"
Bernstein Tutorials Computational Neuroscience meets Visual Perception
36th European Conference on Visual Perception
August 2013, Bremen, Germany

- "The Computational Neuroscience of Resting State"
Invited Lecture at the Berlin Computational Neuroscience Retreat
August 2013, Berlin, Germany

- "Theory of network spikes in vitro and in vivo"
Oral communication. CORONET (EU Project) Review Meeting in Rome.
September 2013, Rome, Italy

- "The link between Structure and Function in the Brain: The Resting State"
Keynote speaker. European Conference on Complex Systems.
September 2013, Barcelona, Spain

-"The Resting State of the Brain: The Importance of Being Balanced"
Invited talk. Workshop CONSOLIDER: Cognitive Neuroscience and Bilingualism.
September 2013, Barcelona, Spain

- "Modeling Cognitive Architectures"
Invited talk. Foundation of the European Institute of Theoretical Neuroscience.
February 2014, Paris, France

- "Linking structure and function: the role of modelling in understanding the pathophysiology".
Invited talk. European Congress of Radiology.

March 2014, Vienna, Austria

- "Linking the Structural and Functional Human Connectome"
Keynote speaker. ABS Physiological Methods Workshop.
April 2014, Leuven, Belgium

-"Temporal aspects of resting state"
Oral communication. HBP Workshop on Large-Scale and Cognitive Models.
June 2014, Paris, France

-"The structural and functional human connectome"
Invited talk. ESI Systems Neuroscience Conference (ESI-SyNC).
July 2014, Frankfurt, Germany

-"The Computational Neuroscience of a Resting Brain"
Invited talk. Computational and Cognitive Neuroscience Summer School.
July 2014, Shangai, China

-"Integration and Segregation in the Brain"
Invited talk. Bernstein Conference 2014.
September 2014, Goettingen, Germany

-"Linking the Structural and Functional Human Connectome"
Keynote speaker. UCL-Max Planck Meeting on Computational Psychiatry.
September 2014, Munich, Germany

-"Linking the structural and functional human connectome"
Invited talk. Magnetic Resonance Imaging in Attention Research.
September 2014, Magdeburg, Germany

-"Temporal Aspects of Spontaneous Brain Activity"
Keynote speaker. Bernstein Center for Computational Neuroscience Retreat.
September 2014, Pforzheim, Germany

-"Linking the Structural and Functional Human Connectome"
Invited talk. 4th Frontiers in Neuromorphic Computing.
October 2014, Heidelberg, Germany

-"Missing interactions at the functional level: The role of oscillations in global brain activity"
Invited talk. Workshop: Missing Interaction terms in spike-based computations - European Institute for Theoretical Neuroscience.
October 2014, Paris, France

-"Plasticity in the functional and structural human connectome"
Invited talk. Workshop: The Adaptive Brain, Pleasure and Plasticity.
October 2014, Munich, Germany

-"Resting State: Experiments and Modelling"
Invited talk. CCNi Debate: Spontaneous Brain Activity – Spook or Spirit?
University of Glasgow.

March 2015, Glasgow, United Kingdom

-"The Computational Neuroscience of Resting Brains"
Invited talk. INCF Training Course on Information Processing in Neural Systems
University of Osnabrueck.
May 2015, Osnabrueck, Germany

-"Integration and Segregation of Information in the Brain"
Invited talk. B-Debate: A Dialogue with the Cerebral Cortex: Cortical Function and
Interfacing
May 2015, Barcelona, Spain

-"The Dynamics of Resting Fluctuations in the Brain"
Keynote. Computational Neuroscience Conference CNS 2015
July 2015, Prague, Czech Republich

-" Towards a global model of whole-brain activity: Lessons from the human connectome"
Keynote. SENC (XVI National Congress of the Spanish Society of Neuroscience)
September 2015, Granada, Spain

-"The Human Connectome: Towards Whole-Brain Modeling"
Invited talk. B-Debate: A Brain Health: From Genes to Behavior Improving our Life
October 2015, Barcelona, Spain

-"A Network Approach for Characterizing Different Brain States"
Invited talk. International Symposium Frontiers in Network Science, Academy of Sciences
and Humanities
June 2016, Hamburg, Germany.

-"Can we simulate the brain?"
Keynote speaker ESOF Workshop Manchester 2016
July 2016, Manchester, United Kingdom

-"Towards Neuronal Principles: The dynamical complexities underlying different brain
states"
Invited talk. Workshop: How the brain works?, Carlsberg Academy
September, 2016 Copenhagen.Denmark

-"The dynamical complexities underlying different brain states"
Invited talk. Resting State Brain Connectivity 2016.
September 2016 Vienna, Austria

-"Tracking states of vigilance and consciousness with dynamic functional connectivity
Resting State Brain Connectivity"
Invited talk. Satellite Symposia: Dynamic Functional Connectivity.
September, 2016 Austria

-"Towards a Whole Brain Model: Lessons from the Human Connectome"
Keynote speaker. Child and Brain Development (Organized by the CIFAR).
October 2016, Boston, USA

-"Towards a Whole Brain Model: Lessons from the Human Connectome"
 Invited talk. Brain Modes 2016 - The Royal Flemish Academy of Science.
 December, 2016, Brussels, Belgium

-"Towards a Global Model of Brain Activity: How to Identify Brain States?"
Keynote speaker. Monash University, MICCN Computational Neuroscience Symposium 2017
February 2017, Melbourne, Australia

-"Novel Concept of Intrinsic Ignition Characterises the Broadness of Communication Underlying Different Brain States"
Keynote speaker. 37th European Winter Conference on Brain Research
March, 2017. Les Arcs 1800, France

- "Whole-brain models: Identifying brain states"
Invited Talk. The 6th International Conference on Cognitive Neurodynamics
4 August, 2017. Seville, Spain

- "Whole Brain Modeling and Connectomics: The Role of the Underlying Oscillations"
Invited talk. Gamma Oscillations Workshop
11 September, 2017. St Edmund Hall, Oxford, UK

- "The Incoherence of Incoherence
Keynote speaker. System Neuroscience Symposium
October, 2017 Tuebingen, Germany

-"Theoretical and Computational Neuroscience: Whole-Brain Dynamics and Modelling"
Invited talk. Workshop on Collaborative Research in Computational Neuroscience (USA Spain) NIH, NSF, Spanish Ministry
15 February, 2018 Spain

-"Brain Songs: discovering the relevant timescale of the human brain"
Invited talk. Analysis and Modeling of Complex Oscillatory Systems (AMCOS) Conference
20 March, 2018 Barcelona, Spain

-"Whole Brain Dynamics and Modelling"
Invited talk. Brainhack Global 2018
4 May, 2018 Spain

-"Towards Causal Neuroimaging: Whole Brain Dynamics and Modeling
Keynote speaker. Organization for Human Brain Mapping
19 June, 2018 Singapore

-"Computational Models of Stroke"
Invited talk Workshop on Stroke from the Human Brain Project,
10 September, 2018 Florence, Italy

-"Overview of Ignition approaches and modeling in epilepsy"
Invited talk Workshop and Scientific Retreat of the Sinergia Project (Swiss Project),

12 September, 2018 Commeire, Switzerland

-"Stimulation Driven Transitions Between Different Brain States: A Probabilistic State Space Framework"
Keynote Speaker. 2nd International Workshop on Connectomics in NeuroImaging (CNI)
CNI'18: A MICCAI 2018 Workshop
20 September, 2018 Spain

-"Brain Songs: Discovering the relevant timescale and richness of repertoire of the human brain"
Keynote speaker. NeuroEng 2018, the 11th Australasian Workshop on Neuro-Engineering and Computational Neuroscience
27 Nov, 2018, Australia

-"Brain Songs: Discovering the relevant timescale and richness of repertoire of the human brain"
Invited talk / Symposium. How tools and models resolve the neuronal networks in the mammalian brain: Six years of collaborative research
6 Jun, 2019, Hamburg Germany

-"Awakening: Predicting external stimulation to force transitions between different brain states
Invited talk Mystery of the Brain Science's Ultimate Frontier Symposium in Honor Prof. Dr. Nikos Logothetis
16 Sep, 2019 Germany

-"The Next Brain"
Invited talk: The Bankinter Innovation Foundation XXXIII Future Trends. Forum in Madrid
12 Nov, 2019 Madrid

-"Turbulence in Human Brain Dynamics"
Invited Talk The Interdisciplinary Forum on Brain-Mind Forefronts-University of Shanghai
22 Sep 2020 Shanghai China

-"The Turbulent Brain: Discovering the homogeneous isotropic functional core organization of the human brain"
Invited Talk Bernstein Conference 2020, Workshop: Crossing scales: understanding collective neural activity
29 Sep, 2020 Juelich Germany

-"Turbulence in Human Brain Dynamics"
Invited Talk Brain Criticality
7 Oct, 2020 Bethesda, USA

-"Awakening – promoting transitions between different brain states in a probabilistic state space framework"
Invited talk 7th International Conference on Non-invasive Brain Stimulation 64th Annual Meeting of the German Society for Clinical Neurophysiology and Functional Imaging (DGKN) 4th European Conference of Brain Stimulation in Psychiatry
Nov, 2020 Germany

-"Turbulent-like Dynamics in the Human Brain"
Invited talk Brain Connectivity Workshop 2021
May, 2021 Toronto, Canada

-"Resting-state brain turbulence in major depressive disorder vs healthy controls"
Invited talk NeuroPharm Annual Meeting,
June, 2021 Denmark, Copenhagen

-"The arrow of time in brain dynamics: non-equilibrium in different brain states"
Invited Talk Workshop on Dynamic properties of brain states and their transitions
Computational Neuroscience CNS2021
July 2021

-"Functional and effective connectivity - useful concepts for network neuroscience?"
Invited talk Generative anatomically-constrained connectivity and effective connectivity
Workshop
August, 2021 Hamburg Germany

-Turbulence in the Human Brain Dynamics"
Invited talk Dynamics Days Europe 2021
August, 2021 Nice, France

-"The Turbulent Brain"
Keynote speaker The 6th International Congress on Complex Systems in Sport
(https://www.iccss2020.com/)
September, 2021 Germany

-"The Turbulent Brain: A new Framework for Whole-brain Dynamics"
Keynote speaker Psychonomic Society Annual Meeting: Society of Computational
Psychology
Nov, 2021

-"Thermodynamics of Mind"
  Keynote speaker First International Conference on "Brain Dynamics and Consciousness",
20 Apr, 2022 Jaen, Spain.

-"The arrow of time in brain signals: assessing causality."
Workshop: In2PrimateBrains Università degli Studi di Roma La Sapienza Roma, Italy
4 May, 2022 Italy

-"The Thermodynamics of Mind"
Workshop Project Galvani (Organized by Neuroelectrics, and Marseille University)
6 May, 2022 Barcelona Spain

-"Generative modeling of brain functions using turbulence"
Organization Human Brain Mapping OHBM 2022 Glasgow
19 Jun, 2022 Glasgow Scotland

-"The Thermodynamics of Mind"

Keynote speaker Summer School ABC Amsterdam Brain and Cognition (ABC)
1 Jul, 2022 Amsterdam The Netherlands

-"Towards Causal Neuroimaging: Whole-Brain dynamics and models"
Keynote speaker Microstates Conference,
1 Sep, 2022 Bern Switzerland

-"The Thermodynamics of Mind"
BrainComp22, Cetraro, Italy
19 Sep, 2022 Italy

"The Thermodynamics of Mind"
Keynote speaker Mathematics of The Interactions Between Brain Structure and Brain
        Functions, MATRIX Workshop at the University of Melbourne, Australia
Nov, 2022 Australia

-"The Thermodynamics of Mind"
  Brain Modes 2022, Viña del Mar, Chile
  19 Nov, 2022 Chile

Patents:

1) 1995P02051 DE   "Lernverfahren und Anordnung zur Nachbildung eines dynamischen Prozesses", G. Deco and J. Storck
conceded in: Germany, USA

2) 1996P01205 DE   "Verfahren zur Klassifikation einer Zeitreihe, die eine vorgebbare Anzahl von Abtastwerten aufweist, insbesondere eines elektrischen Signals, durch einen Rechner", G. Deco und B. Schürmann
conceded in: Germany, France and England

3) 1996P01207 DE   "Verfahren zur Klassifikation einer Zeitreihe, die eine vorgebbare Anzahl von Abtastwerten aufweist, insbesondere eines elektrischen Signals, durch einen Rechner", G. Deco and B. Schürmann
conceded in: Germany, USA

4) 1996P01246 DE   "Verfahren zur Klassifikation einer Zeitreihe, die eine vorgebbare Anzahl von Abtastwerten aufweist, beispielsweise eines elektrischen Signals, durch einen Rechner und Verwendung des Verfahrens ", G. Deco and B. Schürmann
conceded in: Germany, USA

5) 1996P01608 DE   "Verfahren zur Klassifikation einer Zeitreihe, die eine vorgebbare Anzahl von Abtastwerten aufweist, beispielsweise eines elektrischen Signals, durch einen Rechner", G. Deco and C. Schittenkopf
conceded in: Germany, USA

6) 1996P01855 DE   "Rechnergestütztes Verfahren zur Auswahl von Trainingsdaten für ein neuronales Netz", G. Deco, D. Obradovic and B. Schürmann
conceded in: Germany, France, England

7) 1996P02453 DE   "Verfahren zur Klassifikation der statistischen Abhängigkeit einer ersten Zeitreihe, die eine vorgebbare Anzahl von Abtastwerten, insbesondere eines elektrischen Signals, aufweist, durch einen Rechner", G. Deco and C. Schittenkopf
conceded in: Germany, Netherlands, England
pending in: Japan, USA.

8) 1997P01352 DE   "Verfahren zur rechnergestützten Extraktion statistisch unabhängiger digitaler Signale aus digitalen Eingangssignalen", G. Deco and D. Obradovic
conceded in: Germany, Netherlands, England, Finnland, Japan, USA

9) 1997P08002 DE   "Verfahren zur Detektion von Synchronizität zwischen mehreren digitalen Messreihen mit Hilfe eines Rechners", G. Deco and L. Martignon
conceded in: Germany, Netherlands, England, Austria, Israel, Japan, USA

10) 1997P08003 DE   "Zur Detektion von Synchronizität zwischen mehreren digitalen Messreihen mit Hilfe eines Rechners", G. Deco and L. Martignon
conceded in: Germany, Netherlands, England, Austria, Israel, Japan, USA.

11) 1997P08119 DE   "Verfahren und Vorrichtung zur Klassifikation einer ersten Zeitreihe und einer zweiten Zeitreihe", G. Deco and C. Schittenkopf and R. Silipo
conceded in: Germany

12) 1997P08121 DE   "Anordnung zur Vorhersage einer Abnormalität eines Systems und zur Durchführung einer der Abnormalität entgegenwirkenden Aktion", G. Deco and L. Dubé
conceded in: Germany, France, England, Italy,USA.

13) 1998P02394 DE   "Verfahren zum Trainieren eines neuronalen Netzes, Verfahren zur Klassifikation einer Folge von Eingangsgrössen unter Verwendung eines neuronalen Netzes, neuronales Netz und Anordnung zum Trainieren eines neuronalen Netzes", G. Deco and B. Schürmann
conceded in: Germany, France, England, Austria, Belgien, USA

14) 1999P01906 DE   "Mustersuche", G. Deco and B. Schürmann
conceded in: Germany, France, England, Austria, Italy, Netherlands, Japan, USA.

15) 1999P01907 DE   "Mustersuche", G. Deco and B. Schürmann
conceded in: Germany, France, England, Austria, Italy, Netherlands, Japan, USA.

16) 1999P01908 DE   "Mustererkennung", G. Deco and B. Schürmann
conceded in: Germany, France, England, Austria, Italy, Netherlands, Japan, USA.

17) 2001P09039 DE   "Diskrimnierung kontinuierlicher und multivariater Signale mit einem Netzwerk von pulsgekoppelten Oszillatoren", G. Deco and J. Storck
Patent pending.

18) GR 99E2492 DE   "Rekurrente Netze zur Klassifizierung dynamischer Signale", G. Deco and B.Schürmann
Patent pending.

19) 2001P14962 DE   "Gabor-rekurrente Netze zur effizienten Bildkodierung", G. Deco and B. Schürmann
Patent pending.

20) 2000P19382 DE   "Neurodynamisches System aus gepulsten Oszillatoren zur Aufmerksamkeitsgetriebenes Suche von Objekten", G. Deco and S. Corchs
pending in: Germany.

21) GR 99E6770 DE   "Multimodulares neurodynamisches System zur intelligenten, aufmerksamkeitsgesteuerten visuellen Suche", G. Deco and B. Schürmann

pending in: Germany, France, England, Austria, Italy, Netherlands, Japan, USA.

22) 2001P09068 DE   "Netzwerke aus gepulsten Neuronen mit dynamischen Synapsen zur Klassifizierung der Verkehrsdynamik in Rechnernetzen", G. Deco, J. Storck and B. Schürmann
Patent pending.

23) 2000P01870 DE   "Neurokognitives System zur visuellen Objekterkennung", G. Deco and B. Schürmann
Patent pending.

24) 2000E14212 DE   "Thought-Mouse", C. Hoffmann, J. Storck, G. Deco and B. Schürmann
Patent pending.

25) 2000E16468 DE   "Sprachsignalfilterung durch eine rekurrente aufmerksamkeitsbasierte Independent Component Analysis Prozedur", G. Deco and B. Schürmann
pending in: Germany, France, England, Austria, Italy, Netherlands, Japan, USA.

26) 2001P14963 DE   "IDENTIFY: Image-Based Diagnostics by Extraction, Neurocognitive Testing and Identification of Feature Yield", B. Schürmann, M. Stetter, G. Deco, and J. Storck.
Patent pending.

27) 2000E18262 DE   "SmartBot: Saccade-Based User Intention Detection", G. Deco, J. Storck, B. Schürmann, and M. Stetter.
Patent pending.

28) 2001P14964 DE   "ImageBot: Web Image Mining", G. Deco, J. Storck, B. Schürmann, and M. Stetter.
Patent pending.

29) 2000E18297 DE   "NeuroWarp: Vollautomatische inhaltsbasierte Bildüberlagerung (Warping) durch ein neurokognitives Modul", M. Stetter, G. Deco, J. Storck, and B. Schürmann.
Patent pending.

30) 2001P16787 DE   "CALIBRATOR: Calculation of Instantaneous BOLD-to-Spike Ratio by Acummulation of Total Oxygen", M. Stetter, S. Corchs, G. Deco, B. Schürmann, and J. Storck.
Patent pending.

31) 2001P08864 DE   "DIAMOND: Diagnostic Aid by Modelling of Neurocognitive Dynamics", S. Corchs, G. Deco, B. Schürmann, M. Stetter, and J. Storck.
Patent pending.

32) 2001P08873 DE   "Neurodynamische Architektur zur Aufmerksamkeitsbasierten Objekterkennung and visuelle Suche", G. Deco.
Patent pending.

33) 2000E22858 DE   "Speech Processing with Networks of Spiking Neurons and Dynamic Synapses", J. Stork, F. Jäkel, G. Deco, M. Stetter, and B. Schürmann.
Patent pending.

34) 2001E04431 DE   "Autonome Fahrzeugsteuerung basierend auf visuelle Suche", M. Stetter, G. Deco, and B. Schürmann.
Patent pending.

35) 2002P12914 DE   "fMRI-basierte Modellierung zur computergestützten Diagnostic: Extrahierung der funktionellen Konnektivität", G. Deco, and N. Galm.
Patent pending.

36) 2002P12938 DE   "fMRI-basierte Modellierung zur computergestützten Diagnostic: Verwendung nichtlinearer Konnektivitätsgleichungen", G. Deco, and N. Galm.
Patent pending.

37) 2002P12929 DE   "fMRI-basierte Modellierung zur computergestützten Diagnostic: Verwendungen von Statistiken höherer Ordnungen im Rahmen der "Structural Equatin Modeling"", G. Deco, and N. Galm.
Patent pending.

38) 2002P12915 DE   "fMRI-basierte Modellierung zur computergestützten Diagnostik", G. Deco, and N. Galm.
Patent pending.

39) 2002E03585 DE   "Hierarchical Neurodynamical Cortical Architecture for Invariant Object recognition", G. Deco.
Patent pending.

40) 2002P12816 DE   "Computer-Aided Drug Evaluation with fMRI for Cerebral Disorders", G. Deco, M. Stetter and N. Galm
Patent pending .

41) 2002E18963 DE   "Method for Quantitative Evaluation of fMRI Event-Related Signals by a Neurodynamical Model", G. Deco, S. Corchs
Patent pending .

42) 2002E18964 DE   "An Implementation of Working Memory for Intelligent Systems by a Network of Spiking Neurons", G. Deco
Patent pending.

43) 2002E18964 DE   "Neurodynamical Model of Event-related fMRI Measurements for Clinical Diagnosis", G. Deco
Patent pending.

44) 2004P11578 DE   "Dynamic Shaping of Feature Selectivity in IT by Visual Categorization", M. Stetter, R. Almeida, M. Szabo and G. Deco
Patent pending.

45) 2004P03492 DE   "Efficient Information Storage in Task-Relevant Working Memory by Propagation of Competition", R. Almeida , G. Deco and M. Stetter
Patent pending.

46) 2003E13999 DE   "Extended Biased Competition-Cooperation Neurocognitive Model for Attentional Filtering of Irrelevant Inputs", R. Almeida , G. Deco, M. Szabo and M. Stetter
Patent pending.

47) 2004P11500 DE   "Bioanalogue Mechanisms of Reward-Processing for Cognitive Flexibility", G. Deco and M. Stetter
Patent pending.

48) 2004P14971 DE   "Sequential Learning by Neurodynamical Mechanisms", G. Deco and M. Stetter
Patent pending.

49) 2005E10500 DE   "Bioanaloges Belohnungs-basiertes Lernverfahren zur Klassifizierung mit emergenter Merkmals-Selektivität im Inputraum", G. Deco, M. Szabo and M. Stetter
Patent pending.

50) 2005E11915 DE   "A Neurodynamical Architecture for Cross-Modal and Cross-Temporal Integration", G. Deco and M. Stetter
Patent pending.

51) 2006 E22954 DE   "Verfahren zur probabilistischen Entscheidungsfindung bei unsicherer Information", G. Deco and M. Stetter
Patent pending.

52) 2006 E22959 DE   "Verfahren zur intelligenten Situationserkennung in selbstorganisierenden Sensornetzen", G. Deco, M. Stetter, and L. Tambosi
Patent pending.

List of Publications of Gustavo Deco

A)   Publications of books:

1)   "An Information-Theoretic Approach to Neural Computing"
G. Deco and D. Obradovic
Springer Verlag (New York), 1996.

2)   "Information Dynamics: Foundations and Applications"
G. Deco and B. Schürmann
Springer Verlag (New York), 2000.

3)   "The Computational Neuroscience of Vision"
E. Rolls and G. Deco
Oxford University Press, 2001.

4)   "The Noisy Brain"
E. Rolls and G. Deco
Oxford University Press, 2010.

B)   In Reviews:

B-0: Special Edited Issues

1)   Special issue on: „Theoretical and Computational Neuroscience: Understanding Brain Functions", Journal of Physiology (Paris), **100**, Nos. 1-3, July/September 2006 (Ed. G. Deco).

2)   Special issue on: „50 Years of Artificial Intelligence: a Neuronal Approach, Campus Multidisciplinary in Perception and Intelligence", Neurocomputing, **71**, Nos. 4-6, 2008 (Eds.: A. Fernandez-Caballero, J. Mira, and G. Deco).

3)   Special issue on: „Computational Models of the Brain", Neuroimage, **52**, Nos. 3, September 2010 (Eds.: M. Breakspear, V. Jirsa, and G. Deco).

4)   „Cortico-cortical Communication Dynamics", Frontiers in System Neuroscience, 8:19. doi: 10.3389/fnsys.2014.00019, 2014 (eds.: G. Deco, P. Roland, C. Hilgetag).

B-1: Publications in Theoretical Physics

1)   "Electron Capture by Proton and Alpha Particle Impact on Helium Atoms", G. Deco, J. Maidagan and R. Rivarola, J. Phys. B: Atom. Mol. Phys., L707, **17**, 1984.

2)   "Symmetric Eikonal Calculations in Charge Exchange Ion-Atom", R. Rivarola, G. Deco and J. Maidagan, Nuclear Instruments and Methods, B**10/11**, 222, 1987.

3)   "Second Order Symmetric Eikonal Approximation for Electron Capture at High Energies", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **18**, 2283, 1985.

4) "Symmetric Eikonal Approximation for Electron Excitation in Ion-Atom Collisions", G. Deco, P. Fainstein and R. Rivarola, J. Phys. B: Atom. Mol. Phys.J. Phys. B: Atom. Mol. Phys., **19**, 213, 1986.

5) "Relativistic Continuum Distorted Wave Model for Electron Capture", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **19**, 1759, 1986.

6) "Symmetric Eikonal Theory for Electron Capture in Ion-Atom Collisions", G. Deco, R. Piacentini and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **19**, 3727, 1986.

7) "Application of a First-Born-Approximation for 2l-Electron Capture in Ion-Atom Collisions", G. Deco, J. Hanssen and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **19**, L635, 1986.

8) "A Theoretical Model for Charge Transfer at Relativistic Energies", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **20**, 317, 1987.

9) "Relativistic Distorted Wave Model for Electron Capture", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., B**24/25**, 134, 1987.

10) "On Spin Flip-Charge Exchange in Relativistic Ion-Atom Collisions", G. Deco and R. Rivarola, Nuclear Instruments and Methods, B**28**, 154, 1987.

11) "Relativistic Electron Capture in Ion-Atom Collisions", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **20**, 3853, 1987.

12) "Relativistic Continuum Distorted Wave Model for Arbitrary Initial and Final Shells-Electron Capture in Ion-Atom Collisions", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **20**, 5117, 1987.

13) "Electron Capture Following Electron-Positron Pair Production in Relativistic Collisions", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **21**, 1229, 1988.

14) "Creation of Electron-Positron Pairs in the Target Field Followed by Electron Capture in the Target", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **21**, 1861, 1988.

15) "K-Shell Vacancy Production in Asymmetric Collisions", A. Martinez, G. Deco, P. Fainstein and R. Rivarola, Nuclear Instruments and Method, B**34**, 32, 1988.

16) "Introduction of Short Range Interactions in the CDW Theory of Electron Capture for Ion-Atom Collisions", H. Bachau, G. Deco, A. Salin, J. Phys. B: Atom. Mol. Phys., **21**, 1403, 1988.

17) "Electron Capture in the Target Following Electron-Positron Pair Production in the Simultaneous Presence of the Fields of the Projectile and of the Target", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., 21, **L299**, 1988.

18) "Pair Production with Electron Capture in Relativistic Heavy Ion Collisions", G. Deco and R. Rivarola, J. Phys. B: Atom. Mol. Phys., **22**, 1043, 1989.

19) "Ionization of Heavy Targets by Impact of Relativistic Projectile", G. Deco, P. Fainstein and R. Rivarola, Nuclear Instruments and Methods, B**35**, 100, 1988.

20) "Asymptotic Behavior of Distorted Wave Models for Ionization at Relativistic Energies", G. Deco and N. Grün, J. Phys. B: Atom. Mol. Phys., **22**, 1357, 1989.

21) "Two Center Effects in Relativistic Radiative Electron Capture", G. Deco and R. Rivarola, Phys. Rev. A, **39**, 5451, 1989.

22) "Electron Capture and Ionization in Atomic Collisions", A. Martinez, G. Deco and R. Rivarola, Nuclear Instruments and Methods, B**43**, 24, 1989.

23) "An Approximate Description of the Double Capture Process in He2+ + He Collisions with Static Correlation", G. Deco and N. Grün, Z. Phys. D., **18**, 339-343, 1991.

24) "Capture from the Vacuum in Ion-Ion Collisions at Relativistic Energies", G. Deco and N. Grün, J. Phys. B: Atom. Mol. Phys., **22**, 3709, 1989.

25) "K - Shell Ionization in Relativistic Heavy Ion Collisions", G. Deco and N. Grün, J. Phys. B: Atom. Mol. Phys., **23**, 2091, 1990.

26) "Angular Distribution of Electron-Positron Pair Produced in Relativistic Ion-Ion Collisions", G. Deco and N. Grün, Physics Letters, **143**, 387, 1989.

27) "Double Electron Capture of He++ from He at High Velocity", R. Schuch, E. Justiniano, H. Vogt, G. Deco and N. Grün, J. Phys. B: Atom. Mol. Phys., **24**, 133-138, 1991.

28) "Matrix Continuum Distorted Wave Approximation for Electron Capture", G. Deco, O. Fojon, J. Maidagan and R. Rivarola, Phys. Rev. A, **47**, 3769, 1993.

29) "Do Symmetric Eikonal and Continuum Distorted Wave Models Satisfy the Correct Boundary Conditions?", G. Deco, J. Maidagan, O. Fojon and R. Rivarola, Physica Scripta, **51**, 334, 1995.

30) "Relativistic Highly Charged Ion Collsions", G. Deco, O. Fojon and R. Rivarola, Nuclear Instruments and Methods, B**98**, 231-234, 1995.

B-2: Publications in Neural Networks and Nonlinear Dynamics:

31) "Coarse Coding Resource Allocating Network", G. Deco and J. Ebmeyer, Neural Computation, **5**, 105-114, 1993.

32) "Neural Learning of Chaotic System Behaviour", G. Deco and B. Schürmann, IEICE Transactions on Fundamentals of Electronics, Communications and Computer Science, **E77-A**, n 11, 1840-1845, 1994.

33) "Unsupervised Mutual Information Criterion for Elimination of Overtraining in Supervised Multilayer Network", G. Deco, W. Finnoff and H.G. Zimmermann, Neural Computation, **7**, 86-107, 1995.

34) "Decorrelated Hebbian Learning for Clustering and Function Approximation", G. Deco and D. Obradovic, Neural Computation, **7**, 338-348, 1995.

35) "Unsupervised Learning for Boltzmann Machines", G. Deco and L. Parra, Network: Computation in Neural Systems, **6**, 437-448, 1995.

36) "Continuous Boltzmann Machine with Rotor Neurons", L. Parra and G. Deco, Neural Networks, **8**, 375-385, 1995.

37) "Nonlinear Higher Order Statistical Decorrelation by Volume-Conserving Neural Networks", G. Deco and W. Brauer, Neural Networks, **8**, 525-535, 1995.

38) "Learning Time Series Evolution by Unsupervised Extraction of Correlations", G. Deco and B. Schürmann, Physical Review E, **51**, 1780-1790, 1995.

39) "Redundancy Reduction with Information Preserving Nonlinear Maps", L. Parra, G. Deco and S. Miesbach, Network: Computation in Neural Systems, **6**, 61-72, 1995.

40) "Neural Learning of Chaotic Dynamic", G. Deco and B. Schürmann, Neural Processing Letters, **2**, 23-26,1995.

41) "Information Theory and Local Learning Rules in a Self-organizing Network of Ising Spins", M. Haft, G. Deco and M. Schlang, Physical Review E, **52**, 2860-71, 1995.

42) "Statistical Physics Theory of Query Learning by an Ensemble of Higher-Order Neural Networks", G. Deco and D. Obradovic, Physical Review E, **52**, 1953-1957, 1995.

43) "Rotation Based Redundancy Reduction Learning", G. Deco and D. Obradovic, Neural Networks, **8**, 751-755, 1995.

44) "Statistical-Ensemble Theory of Redundancy Reduction and the Duality Between Unsupervised and Supervised Neural Learning", G. Deco and B. Schürmann, Physical Review E, **52**, 6580-6587, 1995.

45) "Statistical Independence with Information Preserving Maps", L. Parra, G. Deco and S. Miesbach, Neural Computation, **8**, 262-271, 1996.

46) "Exploring the Intrinsic Information Loss in Single-humped Maps by Refining Multi-Symbol Partitions", G. Deco and C. Schittenkopf, Physica D, **94**, 57-64, 1996.

47) "An Information Theory Based Learning Paradigm for Linear Features Extraction", G. Deco and D. Obradovic, Neurocomputing, **12**, 187-201, 1996.

48) "Two Strategies to Avoid Overfitting in Feedforward Networks", C. Schittenkopf, G. Deco and W. Brauer, Neural Networks, **10**, 505-516, 1997.

49) "Non-linear Feature Extraction by Redundancy Reduction in an Unsupervised Stochastic Neural Network", G. Deco and L. Parra, Neural Networks, **10**, 683-691, 1997.

50) "Testing Nonlinear Markovian Hypotheses in Dynamical Systems", C. Schittenkopf and G. Deco, Physica D, **104**, 61-74, 1997.

51) "Determining the Information Flow of Dynamical Systems from Continuous Probability Distributions", G. Deco, C. Schittenkopf and B. Schürmann, Physical Review Letters, **78**, 2345-2348, 1997.

52) "Information Flow in Chaotic Symbolic Dynamics", G. Deco, C. Schittenkopf and B. Schürmann, Int. Journal of Bifurcation and Chaos, **7**, 97-105, 1997.

53) "Nonlinear Independent Component Analysis and Multivariate Time Series Analysis", J. Storck and G. Deco, Physica D, **108**, 335-349, 1997.

54) "Finite Automata-Models for the Investigation of Dynamical Systems", C. Schittenkopf, G. Deco and W. Brauer, Information Processing Letters, **63**, 137-141, 1997.

55) "Identification of Deterministic Chaos by an Information-Theoretic Measure of the Sensitive Dependence on the Initial Conditions", C. Schittenkopf and G. Deco, Physica D, **110**, 173-181, 1997.

56) "Detecting Predictability in Non-Stationary Time Series by a Surrogate-Cumulant Based Approach", G. Deco and B. Schürmann, Int. Journal of Bifurcation and Chaos, **7**, 2629-2652, 1997.

57) "Non-parametric Data Selection for Neural Learning in Non-Stationary Time Series", G. Deco, R. Neuneier and B. Schürmann, Neural Networks, **10**, 401-407, 1997.

58) "Dynamics Extraction in Multivariate Biomedical Time Series", R. Silipo, G. Deco, R. Vergassola and H. Bartsch, Biological Cybernetics, **79**, 15-27, 1998.

59) "Information Maximization and Independent Component Analysis: Is there a Difference?", D. Obradovic and G. Deco, Neural Computation, **10**, 2085-2101,1998.

60) "A Characterization of HRV's Nonlinear Hidden Dynamics by Means of Markov Models", R. Silipo, G. Deco, R. Vergassola and C. Gremigni,, IEEE Transactions on Biomedical Engineering, **46**, 978-986, 1999.

61) "Brain Tumor Classification Based on EEG Hidden Dynamics", R. Silipo, G. Deco, and H. Bartsch, Intelligent Data Analysis Journal, **3** (4), 287-306, 1999.

62) "Investigating the Underlying Markovian Dynamics of ECG Rhythms by Information Flow", R. Silipo, G. Deco, B. Schürmann, R. Vergassola and C. Gremigni, Chaos, Solitons and Fractals, **12**, 2877-2888 , 2001.

B-3: Publications in Computational and Cognitive Neuroscience:

63) "Information Transmission and Temporal Code in Central Spiking Neurons", G. Deco and B. Schürmann, Physical Review Letters, **79**, 4697-4700, 1997.

64) "Stochastic Resonance in the Mutual Information between Input and Output Spike Trains of Noisy Central Neurons", G. Deco and B. Schürmann, Physica D, **117**, 276-282, 1997.

65) "The Coding of Information by Spiking Neurons: An Analytical Study", G. Deco and B. Schürmann, Network: Computation in Neural Systems, **9**, 303-317, 1998.

66) "Spatio-Temporal Coding in the Cortex: Information Flow Based Learning in Spiking Neural Networks", G. Deco and B. Schürmann, Neural Computation, **11**, 919-934, 1999.

67) "A Hierarchical Neural System with Attentional Top-Down Enhancement of the Spatial Resolution for Object Recognition", G. Deco and B. Schürmann, Vision Research, **40**, 2845-2859, 2000.

68) "Neurodynamical Mechanism of Binding and Selective Attention for Visual Search", G. Deco and J. Zihl, Neurocomputing, **32-33**, 693-699, 2000.

69) "Neural Coding: Higher-Order Correlations in the Neurostatistics of Cell Assemblies", L. Martignon, G. Deco, K. Lasky, M. Diamond, W. Freiwald, and E. Vaadia, Neural Computation, **12**, 2621-2653, 2000.

70) "Top-down Selective Visual Attention: A Neurodynamical Approach", G. Deco and J. Zihl, Visual Cognition, **8**, 119-140, 2001.

71) "A Neuro-Cognitive Visual System for Object Recognition based on Interactive Attentional Top-Down Hypothesis Testing", G. Deco and B. Schürmann, Perception, **29**, 1249-1264, 2000.

72) "A Neurodynamical Model of Visual Attention: Feedback Enhancement of Spatial Resolution in a Hierarchical System", G. Deco and J. Zihl, Journal of Computational Neuroscience, **10**, 231-251, 2001.

73) "Predictive Coding in the Visual Cortex by a Recurrent Network with Gabor Receptive Fields", G. Deco and B. Schürmann, Neural Processing Letters, **14**, 107-114, 2001.

74) "Temporal Clustering with Spiking Neurons and Dynamics Synapses: Towards Technological Applications", J. Storck, F. Jäkel, and G. Deco, Neural Networks, **14**, 275-285, 2001.

75) "Selective Attention in Visual Search: A Neural Network of Phase Oscillators", S. Corchs and G. Deco, Neurocomputing, **38-40**, 1151-1160, 2001.

76) "Learning Spatio-Temporal Stimuli with Networks of Spiking Neurons and Dynamic Synapses", J. Storck, F. Jäkel, and G. Deco, Neurocomputing, **38-40**, 935-943, 2001.

77) "A Neurodynamical Model for Selective Visual Attention Using Oscillators", S. Corchs and G. Deco, Neural Networks, **14**, 981-990, 2001.

78) "Large-scale Neural Model for Visual Attention: Integration of Experimental Single Cell and fMRI Data". Corchs, S. and Deco, G., Cerebral Cortex, **12**, 339-348, 2002.

79) "A Neurodynamical Model to Simulate Neural Activities in Visual Attention Experiments", S. Corchs and G. Deco, Neurocomputing, **44-46 (C)**, 759-767, 2002.

80) "A Unified Model of Spatial and Object Attention Based on Inter-Cortical Biased Competition", G. Deco and T.S. Lee, Neurocomputing, **44-46 (C)**, 775-781, 2002.

81) "A Computational Neuroscience Account of Visual Neglect", G. Deco, D. Heinke, J. Zihl, and G. Humphreys, Neurocomputing, **44-46 (C)**, 811-816, 2002.

82) "Speech Recognition with Spiking Neurons and Dynamics Synapses: A Model Motivated by the Human Auditory Pathway", C. Naeger, J. Storck, and G. Deco, Neurocomputing, **44-46 (C)**, 937-942, 2002.

83) "A model of binocular rivalry based on competition in IT", L. Lago-Fernández and G. Deco, Neurocomputing, **44-46 (C)**, 503-507, 2002.

84) "The Time Course of Selective Visual Attention: Theory and Experiments", G. Deco, O. Pollatos, and J. Zihl, Vision Research, **42**, 2925-2945, 2002.

85) "Object-Based Visual Neglect: A Computational Hypothesis", G. Deco and E. Rolls, European Journal of Neuroscience, **16**, 1994-2000, 2002.

86) "Attention and Working Memory: A Dynamical Model of Neuronal Activity in the Prefrontal Cortex", G. Deco and E. Rolls, European Journal of Neuroscience, **18**, 2374-2390, 2003.

87) "Large-Scale Computational Modeling of Genetic Regulatory Networks", M. Stetter, G. Deco and M. Dejori, Artifitial Intelligence Review, **20**, 75-93, 2003.

88) "What and Where in Visual Working Memory: A Computational Neurodynamical Perspective for Integrating fMRI and Single-Neuron Data", G. Deco, E. Rolls, and B. Horwitz, Journal of Cognitive Neuroscience, **16**, 683-701, 2004.

89) "Cooperation and Biased Competition Model Can Explain Attentional Filtering in the Prefrontal Cortex", M. Szabo, R. Almeida, G. Deco and M. Stetter, European Journal of Neuroscience, **19**, 1969-1977, 2004.

90) "System-Level Neural Modeling of Visual Attention Mechanisms", S. Corchs, M. Stetter, and G. Deco, Artifitial Intelligence Review, **20**, 143-160, 2003.

91) "A Neurodynamical Cortical Model of Visual Attention and Invariant Object Recognition", G. Deco and E. Rolls, Vision Research, **44**, 621-642, 2004.

92) "Feature Based Attention in Human Visual Cortex: Simulation of fMRI Data", S. Corchs and G. Deco, NeuroImage, **21**, 36-45, 2004.

93) "Integrating fMRI and Single-Cell Data of Visual Working Memory", G. Deco, E. Rolls, and B. Horwitz, Neurocomputing, **58-60**, 729-737, 2004.

94) "A Biased Competition Based Neurodynamical Model of Visual Neglect", G. Deco and J. Zihl, Medical Engineering and Physics, **26**, 733-743, 2004.

95) "The Role of Early Visual Cortex in Visual Integration: A Neural Model of Recurrent Interaction", G. Deco and T.S. Lee, European Journal of Neuroscience, **20**, 1089-1100, 2004.

96) "Modular Biased-Competition and Cooperation: A Candidate Mechanism for Selective Working Memory", R. Almeida, G. Deco, and M. Stetter, European Journal of Neuroscience, **20**, 2789-2803, 2004.

97) "Synaptic and Spiking Dynamics Underlying Reward Reversal in the Orbitofrontal Cortex", G. Deco and E. Rolls, Cerebral Cortex, **15**, 15-30, 2005.

98) "A Neural Model for the Shaping of Feature Selectivity in IT by Visual Categorization", M. Szabo, R. Almeida, G. Deco, and M. Stetter, Neurocomputing, **65-66**, 195-201, 2005.

99) "Sequential Memory: A Putative Neural and Synaptic Dynamical Mechanism", G. Deco, E. Rolls, Journal of Cognitive Neuroscience, **17**, 294-307, 2005.

100) "Neurodynamics of Biased-Competition and Cooperation for Attention: A Model with Spiking Neurons", G. Deco and E. Rolls, Journal of Neurophysiology, **94**, 295-313, 2005.

101) "Neurons and the Synaptic Basis of fMRI Signal Associated with Cognitive Flexibility", A. Stemme, G. Deco, A. Busch, and W. Schneider, NeuroImage, **26**, 454-470, 2005.

102) "Neural Dynamics of Cross-modal and Cross-temporal Associations", G. Deco, A. Ledberg, R. Almeida, and J. Fuster, Experimental Brain Research, **166**, 325-336, 2005.

103) "Cognitive Flexibility and Decision-Making in a Model of Conditional Visuomotor Associations", M. Loh and G. Deco, European Journal of Neuroscience, **22**, 2927-2936, 2005.

104) "Attention, Short-Term Memory, and Action Selection: A Unifying Theory", G. Deco and E. Rolls, Progress in Neurobiology, **76**, 236-256, 2005.

105) "The Neurodynamics of Visual Search", G. Deco and J. Zihl, Visual Cognition, **14**, 1006-1024, 2006.

106) "Detecting Event-related Time-dependent Directional Couplings", R. Andrzejak, A. Ledberg, and G. Deco, New Journal of Physics, **8**, 6 , 2006.

107) "Learning to Attend: Modelling the Shaping of Selectivity in Infero-temporal Cortex in a Categorization Task", M. Szabo, G. Deco, S. Fusi, P. Del Giudice, M. Mattia, and M. Stetter, Biological Cybernetics, **94**, 351-365, 2006.

108) "Reward-biased Probabilistics Decision-making: Mean Field Predictions and Spiking Simulations", D. Martí, G. Deco, P. Del Giudice, and M. Mattia, Neurocomputing, **69**, 1175-1178, 2006.

109) "Neuroynamical Approach to Picture-word Interference Effect", F. Koepke, M. Loh, A. Costa, and G. Deco, Neurocomputing, **69**, 1317-1321, 2006.

110) "Decision-making and Weber's Law: A Neurophysiological Model", G. Deco and E. Rolls, European Journal of Neuroscience, **24**, 901-916, 2006.

111) "A Dynamical Model of Event-Related fMRI Signals in Prefrontal Cortex: Predictions for Schizophrenia", G. Deco, Pharmacopsychiatry, **39 Suppl 1**, S65-S67, 2006.

112) "Attention in Natural Scenes: Neurophysiological and Computational Bases", G. Deco and E. Rolls, Neural Networks, **19**, 1383-1394, 2006.

113) "A Computational Model of Visual Marking Using an Inter-Connected Network of Spiking Neurons: The Spiking Search over Time & Space Model (sSoTS) ", E. Mavritsaki, D. Heinke, G. Humphreys, G. Deco, Journal of Physiology (Paris), **100**, 110-124, 2006.

114) "Interactions Between Higher and Lower Visual Areas Improve Shape Selectivity of Higher Level-Neurons: Explaining Crowding Phenomena", J. Jehee, P. Roelfsema, G. Deco, J. Murre, and V. Lamme, Brain Research, **1157**, 167-176, 2007.

115) "Attention and Spatial Resolution: A Theoretical and Experimental Study of Visual Search in Hierarchical Patterns", G. Deco and D. Heinke, Perception, **36**, 335-354, 2007.

116) "Extended Method of Moments for Deterministic Analysis of Stochstic Multistable Neurodynamical Systems", G. Deco and D. Martí, Physical Review E, **75**, 031913, 2007.

117) "Deterministic Analysis of Stochastic Bifurcations in Multi-Stable Neurodynamical Systems", G. Deco and D. Martí, Biological Cybernetics, **96**, 487-496, 2007.

118) "The Neurodynamics Underlying Attentional Control in Set Shifting Tasks", A. Stemme, G. Deco, and A. Busch, Cognitive Neurodynamics, **1**:3, 249-259, 2007.

119) "Suppressive Effects in Visual Search: A Neurocomputational Analysis of Preview Search", E. Mavritsaki, D. Heinke, G. Humphreys, and G. Deco, Neurocomputing, **70**, 1925-1931, 2007.

120) "The Neuronal Dynamics Underlying Cognitive Flexibility in Set Shifting Tasks", A. Stemme, G. Deco, and A. Busch, Journal of Computational Neuroscience, **23**, 313-331, 2007.

121) "Weber's Law in Decision Making: Integrating Behavioral Data in Humans with a Neurophysiological Model", G. Deco, L. Scarano, and S. Soto-Faraco, The Journal of Neuroscience, **27** (42), 11192-11200, 2007.

122) "A Dynamical System Hypothesis of Schizophrenia", M. Loh, E. Rolls, and G. Deco, PLoS Computational Biology, **3** (11), e228, 2007.

123) "Perceptual Detection as a Dynamical Bistability Phenomenon: A Neurocomputational Correlate of Sensation", G. Deco, M. Pérez-Sanagustín, V. de Lafuente, and R. Romo, Proceedings of the National Academy of Sciences of the USA (PNAS), **104** (50), 20073-20077, 2007.

124) "Neurodynamical Amplification of Perceptual Signals via System-Size Resonance", M. Goldbach, M. Loh, G. Deco and J. Garcia-Ojalvo, Physica D, **237**, 316-323, 2007.

125) "Lexical Plasticity in Early Bilinguals Does Not Alter Phoneme Categories: I. Neurodynamical Modeling", J. Larsson, F. Vera Constán, N. Sebastián Galles and G. Deco, Journal of Cognitive Neuroscience, **20**:1, 76-94, 2008.

126) "Computational Significance of Transient Dynamics in Cortical Networks", D. Durstewitz and G. Deco, European Journal of Neuroscience, **27**, 217-227, 2008.

127) "Neurodynamics of the Prefrontal Cortex During Conditional Visuomotor Associations", M. Loh, A. Pasupathy, E. Miller and G. Deco, Journal of Cognitive Neuroscience, **20**:3, 421-431, 2008.

128) "The Role of Fluctuations in Perception", G. Deco and R. Romo, Trends in Neurosciences, **31**, 11, 591-598, 2008.

129) "The Dynamic Brain: From Spiking Neurons to Neural Masses and Cortical Fields", G. Deco, V. Jirsa, P. Robinson, M. Breakspear, and K. Friston, PLoS Computational Biology, **4**(8): e1000092. doi:10.1371/journal.pcbi.1000092, 2008.

130) "Computational models of schizophrenia and dopamine modulation in the prefrontal cortex", E. Rolls, M. Loh, G. Deco, and G. Winterer, Nature Review Neuroscience, **9**, 696-708, 2008.

131) "An Attractor Hypothesis of Obsessive-compulsive Disorder", E. Rolls, M. Loh, and G. Deco, European Journal of Neuroscience, **28**, 782-793, 2008.

132) "The Neuronal Basis of Attention: Rate versus Synchronization Modulation", A. Bühlmann and G. Deco, Journal of Neuroscience, **28** (3): 7679-7686, 2008.

133) "A Fluctuation-Driven Mechanism for Slow Decision Processes in Reverberant Networks", D. Martí, G. Deco, M. Mattia, G. Gigante, and P. Del Giudice, PLoS One, **3**(7): e2534. doi:10.1371/journal.pone.0002534, 2008.

134) "The Brain Connectivity Workshops: Moving the Frontiers of Computational Systems Neuroscience", K. Stephan, J. Riera, G. Deco and B. Horwitz, NeuroImage, **42**, 1-9, 2008.

135) "Neurodynamical Amplification of Perceptual Signals via System-size Resonance", M. Goldbach, M. Loh, G. Deco, and J. Garcia-Ojalvo, Physica D, **237**, 316-323, 2008.

136) "Lexical Plasticity in Early Bilinguals Does Not Alter Phoneme Categories: II. Experimental Evidence", N. Sebastian, F. Vera-Constan, J. Larsson, A. Costa, and G. Deco, Journal of Cognitive Neuroscience, **21**(12), 2343-2357, 2009.

137) "Attention – Oscillations and Neuropharmacology", G. Deco and A. Thiele, European Journal of Neuroscience, **30**, 347–354, 2009.

138) "Key Role of Coupling, Delay, and Noise in Resting Brain Fluctuations", G. Deco, V. Jirsa, A. McIntosh, O. Sporns and R. Kötter, Proceedings of the National Academy of Science USA, **106** (25) 10302-10307, 2009.

139) "The Encoding of Alternatives in Multiple-choice Decision Making", L. Albantakis and G. Deco, Proceedings of the National Academy of Science USA, **106** (25) pp 10308-10313,2009.

140) "Stochastic Dynamics as a Principle of Brain Function", G. Deco, E. Rolls and R. Romo, Progress in Neurobiology, **88**, 1-16, 2009.

141) "Rate and Gamma Modulation in Attentional Tasks", A. Buehlmann and G. Deco, New Mathematics and Natural Computation, **5**(1), 135-142, 2009.

142) "Multisensory Contributions to the Perception of Vibrotactile Events", S. Soto-Faraco and G. Deco, Behavioural Brain Research, **196**, 145-154, 2009.

143) "Simulating Posterior Parietal Damage in a Biologically Plausible Framework: Neuropsychological Tests of the Search over Time and Space Model", E. Mavritsaki, D. Heinke, G. Deco, and G. Humphreys, Journal Cognitive Neuropsychology, 26, 4, 343 – 390, 2009.

144) "Oscillations, Phase-of-Firing Coding, and Spike Timing-Dependent Plasticity: An Efficient Learning Scheme", T. Masquelier, E. Hugues, G. Deco, and S. Thorpe, Journal od Neuroscience, **29**, 43, 13484-1349, 2009.

145) "Effective Reduced Diffusion-Models: A Data Driven Approach to the Analysis of Neuronal Dynamics", G. Deco, D. Marti, A. Ledebrg, R. Reig, and M. Sanchez-Vives, PLoS Computational Biology, **5** (12):e1000587. doi:10.1371/journal.pcbi.1000587, 2009.

146) "Towards the Virtual Brain: Network Modeling of the Intact and the Damaged Brain ",V. Jirsa, O. Sporns, M. Breakspear, G. Deco, and A.R. McIntosh, Archives Italiennes de Biologie, **148**, 3, 189-205, 2010.

147) " Audiovisual Matching in Speech and Nonspeech Sounds: A Neurodynamical Model", M. Loh, G. Schmid, G. Deco, and W. Ziegler, Journal of Cognitive Neuroscience, **22**, 2, 240–247, 2010.

148) "The Role of Multi-Area Interactions for the Computation of Apparent Motion ", G. Deco and P. Roland, Neuroimage, **51**, 1018-1026, 2010.

149) "Synaptic Dynamics and Decision Making", G. Deco, E. Rolls, and R. Romo, Proceedings of the National Academy of Science USA, **107**, 16, 7545-7549, 2010.

150) "Computational Models of the Brain: From Structure to Function", M Breakspear, V. Jirsa, and G. Deco, Neuroimage, **52**, 727-730, 2010.

151) "Confidence-Related Decision-Making", A. Insabato, M. Pannunzi, E. Rolls, and G. Deco, Journal of Neurophysiology, **104**, 539–547, 2010.

152) Choice, Difficulty, and Confidence in the Brain", E. Rolls, F. Grabenhorst, and G. Deco, Neuroimage, **53**, 694-706.2010.

153) "Optimal Information Transfer in the Cortex through Synchronization", A. Buehlmann and G. Deco, PLoS of Computational Biology, **6**(9): e1000934.doi:10.1371/journal.pcbi.1000934, 2010.

154) "Towards Decision-Making, Errors, and Conidence in the Brain", E. Rolls, F. Grabenhorst, and G. Deco, Journal of Neurophysiology, **104**, 2359 –2374, 2010.

155) "Emerging Concepts for the Dynamical Organization of Resting-State Activity in the Brain", G. Deco, V. Jirsa, and A.R. McIntosh, Nature Review Neurosciences, **12**, 43-56, 2011.

156) "Cortical Microcircuit Dynamics Mediating Binocular Rivalry: The Role of Adaptation in Inhibition", P. Theodoni, T. Panagiotaropoulos, V. Kapoor, N. Logothetis and G. Deco, Frontiers in Human Neuroscience, **5**(145), 1-19, 2011.

157) "Slow Modulation of Ongoing Discharge in the Auditory Cortex During an Interval-Discrimination Task", J. Abolafia, M. Martinez-Garcia, G. Deco and M.V. Sanchez-Vives, Frontiers in Integrative Neuroscience, **5**(60), 1-6, 2011.

158) "Noise in Attractor Networks in the Brain Produced by Graded Firing Rate Representations", T. Webb, E. Rolls, G. Deco and J. Feng, PLoS One, **6**(9), e23630, 2011.

159) "Neural and Computational Mechanisms of Postponed Decisions", M. Martínez-García, E. Rolls, G. Deco and R. Romo, Proceedings of the National Academy of Science USA**,** 108(28), 11626-11631, 2011.

160) "A Computational Neuroscience Approach to Schizophrenia and its Onset", G. Deco and E. Rolls, Neuroscience and Biobehavioral Reviews, **35**, 1644-1653, 2011.

161) "Cholinergic Control of Cortical Network Interactions Enables Feedback-Mediated Attentional Modulation", G. Deco and A. Thiele, European Journal of Neuroscience, **34**, 146-157, 2011.

162) "The Timing of Vision – How Neural Processing Links to Different Temporal Dynamics", T. Masquelier, L. Albantakis and G. Deco, Frontiers in Psychology, **2**(151), , 2011.

163) "Changes of Mind in an Attractor Network of Decision-Making", L. Albantakis and G. Deco, PLoS Computational Biology, **7**(6), e1002086, 2011.

164) "Role of Network Oscillations in Resting-State Functional Connectivity", J. Cabral, E. Hugues, O. Sporns and G. Deco, Neuroimage, **57**, 130-139, 2011.

165) "Predictions of Decisions from Noise in the Brain before the Evidence is Provided", E. Rolls and G. Deco, Frontiers of Neuroscience, **5**(33), 1-11, 2011.

166) "Perceptual Learning with Perceptions", A. Stemme, G. Deco and E. Lang, Cognitive Neurodynamics, **5**(1), 31-43, 2011.

167) "The Dynamical Balance of the Brain at Rest", G. Deco and M. Corbetta, The Neuroscientist, **17**(1), 107-123, 2011.

168) "Bridging the Gap Between Physiology and Behavior: Evidence from the sSoTS Model of Human Visual Attention", E. Mavritsaki, D. Heinke, H. Allen, G. Deco and G. Humphreys G., Psychological Review, **118**(1), 3-41, 2011.

169) "Neuronal Adaptation Effects in Decision Making", P. Theodoni, G. Kovacs, M. Greenlee and G. Deco, The Journal of Neuroscience, **31**(1), 234-246, 2011.

170) "The Role of Rhythmic Neural Synchronization in Rest and Task Conditions", G. Deco, A. Buehlmann, T. Masquelier and E. Hugues, Frontiers in Human Neuroscience, **5**(4), 1-6, 2011.

171) "Theory and Simulation in Neuroscience", W. Gerstner, H. Sprekeler and G. Deco, Science **338** (6103), 60-65, 2012

172) "How anatomy shapes dynamics: a semi-analytical study of the brain at rest by a simple spin model", G. Deco, M. Senden and V. Jirsa, Frontiers in Computational Neuroscience **6** (68), 1-7, 2012

173) "Communication before coherence", E. T. Rolls, T. J. Webb, G. Deco, Eur J Neurosci **36** (5), 2689-2709, 2012

174) "Synaptic depression and slow oscillatory activity in a biophysical network model of the cerebral cortex", J. M. Benita, A. Guillamon, G. Deco and M. Sanchez-Vives, Frontiers in Comp. Neurosci. **6** (64), 1-17, 2012

175) "A Multiple-Choice Task with Changes of Mind" L. Albantakis, F. Branzi, A. Costa and G. Deco, PlosOne **7** (8), 1-15, 2012.

176) "Modeling the outcome of structural disconnection on resting-state functional connectivity" J. Cabral, E. Hugues, M. L. Kringelbach and G. Deco, Neuroimage **62** (3), 1342-1353, 2012

177) "Neuronal Discharges and Gamma Oscillations Explicitly Reflect Visual Consciousness in the Lateral Prefrontal Cortex", T. Panagiotaropoulos, G. Deco, V. Kapoor and N. K Logothetis, Neuron 74: 924-935, 2012

178) "Perception and self-organized in stability", K. Friston, M. Breakspear and G. Deco, Frontiers in Comp.Neurosci. **6** (44): *1-19,* 2012

179) "Functional Graph Alterations in Schizophrenia: A Result from a Global Anatomic Decoupling?", J. Cabral, M. L. Kringelbach and G. Deco, Pharmacopsychiatry 45 *(Suppl. 1):* S57-S64, 2012

180) "Structural connectivity allows for multi-threading during rest: The structure of the cortex leads to efficient alternation between resting state exploratory behavior and default mode processing", M. Senden, R. Goebel R, G. Deco, Neuroimage **60**(4):2274-2284, 2012

181) "Ongoing cortical activity at rest: criticality, multistability and ghost attractors", G. Deco and V. Jirsa, J Neurosci **32**(10): 3366-3375, 2012

182) "Neural network mechanisms underlying stimulus driven variability reduction", G. Deco and E. Hugues, PLoS Comput Biol **8**(3): e1002395, 2012.

183) "Balanced input allows optimal encoding in a stochastic binary neural network model: ananalytical study", G. Deco and E. Hugues, PLoS One **7**(2): e30723, 2012.

184) "Learning selective top-down control enhances performance in a visual categorization task", M. Pannunzi, G. Gigante, M. Mattia, G. Deco, S. Fusi, P. Del Giudice, Journal of Neurophysiology, 2012.

185) "Perception and self-organised instability", K. Friston, M. Breakspear, G. Deco, Frontiers in Computational Neuroscience. 6

186) "Effective Visual Working Memory Capacity: An Emergent Effect from the Neural Dynamics in an Attractor Network", L. Dempere-Marco, D. P. Melcher, and G. Deco, PLoS ONE, vol. 7, no. 8: Public Library of Science, pp. e42719, 08, 2012.

187) "Holding Multiple Items in Short Term Memory: A Neural Mechanism", E.T. Rolls, L. Dempere-Marco, G. Deco, PLoS ONE. 8:e61078, 2013

188) "Resting-State Functional Connectivity Emerges from Structurally and Dynamically Shaped Slow Linear Fluctuations", G. Deco, A. Ponce-Alvarez, D. Mantini, G. L Romani, P. Hagmann, M. Corbetta, Journal of Neuroscience. 33(27), 2013

189) "A Common Neurodynamical Mechanism Could Mediate Externally Induced and Intrinsically Generated Transitions in Visual Awareness", T. I. Panagiotaropoulos, V. Kapoor, N. K. Logothetis, G. Deco, PLoS ONE. 8:e53833, 2013

190) "Bottom up modeling of the connectome: Linking structure and function in the resting brain and their changes in aging", T. T. Nakagawa, V. K. Jirsa, A. Spiegler, A. R. McIntosh, G. Deco, NeuroImage, 2013.

191) "Brain mechanisms for perceptual and reward-related decision-making", G. Deco, E. T Rolls, L. Albantakis, R. Romo, Progress in Neurobiology. 103:194-213, 2013

192) "Multi-stable perception balances stability and sensitivity", A. Pastukhov, P. E. García-Rodríguez, J. Haenicke, A. Guillamon, G. Deco, J. Braun, Frontiers in Computational Neuroscience. 7, 2013.

193) "Neural Variability in Premotor Cortex Is Modulated by Trial History and Predicts Behavioral Performance", E. Marcos, P. Pani, E. Brunamonti, G. Deco, S. Ferraina, P. Verschure, Neuron. 78:249-255, 2013

194) "Resting brains never rest: computational insights into potential cognitive architectures", G. Deco, V. K. Jirsa, A. R. McIntosh, Trends in Neurosciences. 36:268-274, 2013

195) "Spontaneous Brain Activity Predicts Learning Ability of Foreign Sounds", N. Ventura-Campos, A. Sanjuán, J. González, M-Á. Palomar-García, A- Rodríguez-Pujadas, N. Sebastián-Gallés, G. Deco, C. Ávila, The Journal of Neuroscience. 33:9295-9305, 2013

196) "Network Bursting Dynamics in Excitatory Cortical Neuron Cultures Results from the Combination of Different Adaptive Mechanism", T. Masquelier , G. Deco, *PLOS one*. 8(10):1-11, 2013

197) "If you are good, I get better": the role of social hierarchy in perceptual decision-making", H. Santamaría-García, M. Pannunzi, A. Ayneto, G. Deco, Sebastián-Gallés, N, *Soc Cogn Affect Neurosci*. 8(6), 2013

198) "Coherent delta-band oscillations between cortical areas correlate with decision making", V. N, G. Deco, A. Ledberg, R. Romo, *Proc Natl Acad Sci*. 110(37), 2013

199) "Stimulus-dependent variability and noise correlations in cortical MT neurons", A. Ponce-Alvarez, A. Thiele, TD. Albright, GR. Stoner, and G. Deco, *Proceedings of the National Academy of Science USA (PNAS)*. 110(32):13162-7, 2013

200) "Variability and information content in auditory cortex spike trains during an interval-discrimination task, JM. Abolafia, M. Martinez-Garcia", G. Deco, and MV. Sanchez-Vives**,** *Journal of Neurophysiology*. 110(9):2163-74, 2013

201) "Complexity Reduction of Rate-Equations Models for Two-Choice Decision-Making", JA. Carrillo, S. Cordier, and G. Deco, S. Mancini, *PLoS ONE*. 8(12): e80820, 2013

202) "Structural connectivity in schizophrenia and its impact on the dynamics of spontaneous functional network", J. Cabral, HM. Fernandes, TJ. Van Hartevelt, AC. James, ML. Kringelbach, and G. Deco, *Chaos*. 23, 046111, 2013

203) "Neural plasticity in human brain connectivity: the effects of long term deep brain stimulation of the subthalamic nucleus in Parkinson's disease", T. van Hartevelt, J. Cabral, G. Deco, A. Møller A, A, Green, T. Aziz, and M. Kringelbach M, *PLoS ONE*. 9(1):e86496, 2014

204) "How delays matter in an oscillatory whole-brain spiking-neuron network model for MEG alpha-rhythms at rest", T. Nakagawa, M. Woolrich, H. Luckhoo, M. Joensson, H. Mohseni, M. Kringelbach, V. Jirsa, and G. Deco, *Neuroimage*. 87:383-94, 2014

205) "Exploring the network dynamics underlying brain activity during rest", J. Cabral, ML. Kringelbach, and G. Deco *Progress in Neurobiology*. 114C:102-131, 2014

206) "Exploring mechanisms of spontaneous functional connectivity in MEG: How delayed network interactions lead to structured amplitude envelopes of band-pass filtered oscillations", J. Cabral, H. Luckhoo, M. Woolrich, M. Joensson, H. Mohseni, A. Baker, ML. Kringelbach, and G. Deco, *Neuroimage*. 90:423-435, 2014

207) "The Influence of Spatiotemporal Structure of Noisy Stimuli in Decision Making", A. Insabato, L. Dempere-Marco, M. Pannunzi, G. Deco, and R. Romo**,** *PLoS Computational Biology*. 10(4): e1003492, 2014

208) "Cortico-cortical communication dynamics", PE. Roland, CC. Hilgetag, and G. Deco**,** Frontiers System *Neuroscience*. 8:19, 2014

209) "Rich club organization supports a diverse set of functional network configurations", M. Senden, G. Deco, M. de Reus, R. Goebel, and M. van den Heuvel (2014). *Neuroimage*. vol. 96, 174-182, 2014

210) "How Local Excitation–Inhibition Ratio Impacts the Whole Brain Dynamics", G. Deco, A. Ponce-Alvarez, P. Hagmann, GL. Romani, D. Mantini, and M. Corbetta. *Journal of Neuroscience*. 34(23):7886-7898, 2014

211) "Identification of Optimal Structural Connectivity Using Functional Connectivity and Neural Modeling", G. Deco, A. McIntosh, K. Shen, R. Hutchison, R. Menon, S. Everling, P. Hagmann, and V. Jirsa, *Journal of Neuroscience*. 34(23):7910-7916, 2014

212) "Tracing evolution of spatio-temporal dynamics of the cerebral cortex: cortico-cortical communication dynamics", PE. Roland, CC. Hilgetag, and Deco G. *Frontiers in System Neuroscience*. 5;8:76, 2014.

213) "Structure-function discrepancy: inhomogeneity and delays in synchronized neural networks", R. Ton, G. Deco, and A. Daffertshofer, *PLoS Computational Biology*. 10(7):e1003736, 2014

214) "Great Expectations: Using Whole-Brain Computational Connectomics for Understanding Neuropsychiatric Disorders", Deco G, and Kringelbach ML., *Neuron*. 84(5):892-905, 2014

215) "Modeling resting-state functional networks when the cortex falls asleep: local and global changes", Deco G, Hagmann P, Hudetz AG, and Tononi G, *Cerebral Cortex*. 24(12):3180-3194, 2014

216) "Intra-cortical propagation of EEG alpha oscillations", Hindriks R, van Putten MJAM, Deco G, *Neuroimage*. 103:444-453, 2014

217) "Using the Virtual Brain to Reveal the Role of Oscillations and Plasticity in Shaping Brain Dynamical Landscape", Roy D, Sigala R, Breakspear M, McIntosh AR, Jirsa VK, and Deco G, Ritter P. *Brain Connectivity*. 4:791–811, 2014

218) "Networks for memory, perception, and decision-making, and beyond to how the syntax for language might be implemented in the brain", Rolls ET, Deco G. *Brain Research*. 1621:316–334, 2015

219) "The Rediscovery of Slowness: Exploring the Timing of Cognition", Kringelbach ML, McIntosh AR, Ritter P, Jirsa VK, and Deco G. *Trends in Cognitive Sciences*. 19:616–628, 2015

220) "Network Events on Multiple Space and Time Scales in Cultured Neural Networks and in a Stochastic Rate Model", Gigante G, Deco G, Marom S, and Del Giudice P. *Comput Biol*. 11:e1004547, 2015

221) "Task-driven intra- and interarea communications in primate cerebral cortex", Tauste Campo A, Martínez-García M, Nácher V, Luna R, Romo R, and Deco G. *Proceedings of the National Academy of Science USA (PNAS)*. 112:4761–4766, 2015

222) "Altered amygdalar resting-state connectivity in depression is explained by both genes and environment", Córdova-Palomera A, Tornador C, Falcón C, Bargalló N, Nenadic I, Deco G, and Fañanás L. *Human Brain Mapping*. 36:3761–3776, 2015

223) "Computational Modeling of Resting-State Activity Demonstrates Markers of Normalcy in Children with Prenatal or Perinatal Stroke", Adhikari MH, Beharelle RA, Griffa A, Hagmann P, Solodkin A, McIntosh AR, Small SL, and Deco G. *Journal of Neuroscience*. 35:8914–8924, 2015

224) "Evidence from a rare case study for Hebbian-like changes in structural connectivity induced by long-term deep brain stimulation", van Hartevelt TJ, Cabral J, Møller A, Fitzgerald JJ, Green AL, Aziz TZ, Deco G, and Kringelbach ML. *Frontiers in Behavioral Neuroscience*. 9:167. doi: 10.3389/fnbeh.2015.00167, 2015

225) "The Emergence of Spontaneous and Evoked Functional Connectivity in a Large-Scale Model of the Brain", Ponce-Alvarez A, and Deco G. *Brain Mapping*. doi:10.1016/B978-0-12-397025-1.00334-1, 571–579, 2015

226) "Novel fingerprinting method characterises the necessary and sufficient structural connectivity from deep brain stimulation electrodes for a successful outcome", Fernandes HM, Hartevelt TVJ, Boccard SGJ, Owen SLF, Cabral J, Deco G, Green AL, Fitzgerald JJ, Aziz TZ, and Kringelbach ML. *New Journal of Physics*. 17:015001, 2015

227) "Gradual emergence of spontaneous correlated brain activity during fading of general anesthesia in rats: Evidences from fMRI and local field potentials", Bettinardi RG, Tort-Colet N, Ruiz-Mejias M, Sanchez-Vives MV, and Deco G. *Neuroimage*. 114:185–198, 2015

228) "Network dynamics with BrainX3: a large-scale simulation of the human brain network with real-time interaction", Arsiwalla XD, Zucca R, Betella A, Martinez E, Dalmazzo D, Omedas P, and Deco G. *Frontiers in Neuroinformatics*. 9:02. doi: 10.3389/fninf.2015.00002, 2015

229) "Role of white-matter pathways in coordinating alpha oscillations in resting visual cortex", Hindriks R, Woolrich M, Luckhoo H, Joensson M, Mohseni H, Kringelbach ML, and Deco G. *Neuroimage*. 106:328–339, 2015

230) "Task-Driven Activity Reduces the Cortical Activity Space of the Brain: Experiment and Whole-Brain Modeling", Ponce-Alvarez A, He BJ, Hagmann P, and Deco G. *PLOS Computational Biology*. 11:e1004445, 2015

231) "The Encoding of Decision Difficulty and Movement Time in the Primate Premotor Cortex", Martinez-Garcia M, Insabato A, Pannunzi M, Pardo-Vazquez JL, Acuña C, and Deco G. *PLOS Computational Biology*. 11:e1004502, 2015

232) "Deconstructing multi-sensory enhancement in detection", Pannunzi M, Pérez-Bellido A, Pereda-Baños A, López-Moliner J, Deco G, and Soto-Faraco S. *Journal of Neurophysiology*. 113(6):1800-18, 2015

233) "Stochastic cortical neurodynamics underlying the memory and cognitive changes in aging", Rolls ET, and Deco G. *Neurobiology of Learning and Memory*. 118:150-61, 2015

234) "Resting-State Temporal Synchronization Networks Emerge from Connectivity Topology and Heterogeneity", Ponce-Alvarez A, Deco G, Hagmann P, Romani GL, Mantini D, and Corbetta M. PLOS *Computational Biology*. 11:e1004100, 2015

235) "Functional connectivity dynamics: Modeling the switching behavior of the resting state", Hansen ECA, Battaglia D, Spiegler A, Deco G, and Jirsa VK. *Neuroimage*. 105:525–535, 2015

236) "Rethinking segregation and integration: contributions of whole-brain modelling", Deco G, Tononi G, Boly M, and Kringelbach ML. Nature Reviews *Neuroscience*. 16:430–439, 2015

237) "Hippocampal Sharp-Wave Ripples Influence Selective Activation of the Default Mode Network", Kaplan, R., M. H. Adhikari, R. Hindriks, D. Mantini, Y. Murayama, N. K. Logothetis, and G. Deco. *Current Biology*, vol. 26, no. 5: Elsevier {BV}, pp. 686–691, mar, 2016.

238) "Metastability and Coherence: Extending the Communication through Coherence Hypothesis Using A Whole-Brain Computational Perspective", Deco, G., and M. L. Kringelbach. *Trends in Neurosciences*, vol. 39, no. 3: Elsevier {BV}, pp. 125–135, mar, 2016.

239) "Altered resting-state whole-brain functional networks of neonates with intrauterine growth restriction", Batalle, D., E. Muñoz-Moreno, C. Tornador, N. Bargallo, G. Deco, E. Eixarch, and E. Gratacos. *Cortex*, vol. 77: Elsevier {BV}, pp. 119–131, apr, 2016.

240) "Confidence through consensus: a neural mechanism for uncertainty monitoring", Paz, L., A. Insabato, G. Deco, and M. Sigman. *Scientific Reports*, vol. 6, 2016.

241) "Can sliding-window correlations reveal dynamic functional connectivity in resting-state fMRI?", R. Hindriks, M.H. Adhikari, Y. Murayama, M. Ganzetti, D. Mantini, N.K. Logothetis, G. Deco. *NeuroImage*, Volume 127, Pages 242--256. 2016

242) "Estimation of Directed Effective Connectivity from {fMRI} Functional Connectivity Hints at Asymmetries of Cortical Connectome", M. Gilson, R. Moreno-Bote, A. Ponce-Alvarez, P. Ritter, G. Deco. *PLOS Computational Biology Public Library of Science PLoS* e1004762. 2016

243) "Dynamic functional connectivity reveals altered variability in functional connectivity among patients with major depressive disorder", M. Demirtaş, C. Tornador, C. Falcón, M. López-Solà, R. Hernández-Ribas, J. Pujol, J. M. Menchón, P. Ritter, N. Cardoner, C. Soriano-Mas, G. Deco. *Human Brain Mapping*, 1097-0193. 2016

244) "Chimera-like states in modular neural networks", J. Hizanidis, N.E. Kouvaris, G. Zamora-López, Albert Díaz-Guilera, C.G. Antonopoulos. *Scientific Reports* 19845.2016

245) "Does the regulation of local excitation-inhibition balance aid in recovery of functional connectivity? A computational account", A.Valtikonda, B. Surampudi, A. Banerjee, G. Deco, and D. Roy. *Neuroimage*, 136:57-67. 2016

246) "Discrepancies between Multi Electrode LFP and CSD Phase-Patterns: A Forward Modeling Study", R. Hidriks, X.D. Arsiwalla, T. Panagiotaropoulos, M. Besserve, P.F. Verschure, N.K. Logothetis, G. Deco. *Frontiers Neural Circuits*, 10:51, eCollection 2016

247) "Learning a New Selection Rule in Visual and Frontal Cortex", C. Van der Togt, L. Stănişor, A. Pooresmaeili, L. Albantakis, G. Deco, P.R. Roelfsema. *Cerebral Cortex* 26 (8): 3611-3626. 2016

248) "Non-reward neural mechanisms in the orbitofrontal cortex", E. Rolls, G. Deco. *Cerebral Cortex* 82: 27-38. 2016

249) "Neural correlates of metacognition: A critical perspective on current tasks", A. Insabato, M. Pannunzi, G. Deco. *Neuroscience & Biobehavioral Reviews*, 71: 167-175. 2016

250) "Insights into Brain Architectures from the Homological Scaffolds of Functional Connectivity Networks", L.D. Lord, R. Expert, H. Fernandes, G. Petri, T. Van Hartevelt, F. Vaccarino, G. Deco, F. Turkheimer, M.L. Kringelbach. *Frontiers in Systems Neuroscience*, 10, 85. 2016

251) "Functional complexity emerging from anatomical constraints in the brain: the significance of network modularity and rich-clubs", G. Zamora-Lópex, Y. Chen, G. Deco, M.L. Kringelbach, and C.S. Zhou. *Scientific Reports*, 6, 38424. 2016

252) "Environmental factors linked to depression vulnerability are associated with altered cerebellar resting-state synchronization", Córdova-Palomera A, Tornador C, Falcón C, Bargalló N, Brambilla P, Crespo-Facorro B, Deco G & Fañanás L, *Scientific Reports*, 6, 37384. doi: 10.1038/srep37384. 2016

253)."Description of a putative epiallele of the glucocorticoid receptor gene involved in both hippocampal connectivity and depression susceptibility", Palma-Gudiel, H.; Cordova-Palomera, A.; Tornador, C.; Falcon, C.; Bargallo, N.; Deco, G.; Deuschle, M.; Fananas, L *European Neuropsychopharmacology*, 26, S176 - S177. 2016

254) "Cortical rich club regions can organize state-dependent functional network formation by engaging in oscillatory behavior", Senden M, Reuter N, van den Heuvel MP, Goebel R, Deco G, *Neuroimage*, 146:561-574. 2017

255) "How structure sculpts function: Unveiling the contribution of anatomical connectivity to the brain's spontaneous correlation structure", R. G. Bettinardi, G. Deco, V. M. Karlaftis, T. J. Van Hartevelt, H. M. Fernandes, Z. Kourtzi, M. L. Kringelbach, and G. Zamora-López, *Chaos* 27, 047409. 2017

256) "Single or multiple frequency generators in on-going brain activity: A mechanistic wholebrain model of empirical MEG data", Deco G, Cabral J, Woolrich MW, Stevner AB, van Hartevelt TJ, and Kringelbach ML, *Neuroimage*, 152:538-550. 2017

257) "Understanding principles of integration and segregation using whole-brain computational connectomics: implications for neuropsychiatric disorders", Lord LD, Stevner AB, Deco G, Kringelbach ML., *Philos Trans A Math Phys Eng Sci.*, 375(2096). 2017

258) "The most relevant human brain regions for functional connectivity: Evidence for a dynamical workspace of binding nodes from whole-brain computational modeling", Deco G, Van Hartevelt T, Fernandes H, Stevner A and Kringelbach M, *NeuroImage*, 146, 1, 197–210. 2017

259) "Multiple choice neurodynamical model of the uncertain option task", Insabato A., Pannunzi M., Deco G., *PLOS Computational Biology*, 13(1): e1005250. 2017

260) "Hierarchy of information processing in the brain: a novel 'intrinsic ignition' framework" Deco G. & Kringelbach M.L., *Neuron*, 94 (5), 961-968. 2017

261) "Spontaneous cortical activity is transiently poised close to criticality", Hahn G, Ponce-Alvarez A, Monier C, Benvenuti G, Kumar A, Chavane F, et al. PLoS *Computational Biology* 13(5): e1005543. 2017

262) "Decreased integration and information capacity in stroke measured by whole brain models of resting state activity", Adhikari, Mohit H.; Hacker, Carl D.; Siegel, Josh S.; Griffa, Alessandra; Hagmann, Patric; Deco, Gustavo; Corbetta, Maurizio 2017, Brain, 140, 4, 1068 - 1085. 2017

263) "Metastability in Senescence", Naik S, Banerjee A, Bapi RS, Deco G, and Roy D *Trends in Cognitive Science*, 21 (7), 509-521. 2017

264) "Detection of recurrent activation patterns across focal seizures: Application to seizure onset zone identification", M. Vila-Vidal, A. Principe, M. Ley, G. Deco, A. Tauste Campo and R. Rocamora, *Clinical Neurophysiology*, vol. 128, 977-85. 2017

265) "The dynamics of resting fluctuations in the brain: metastability and its dynamical cortical core". Deco G, Kringelbach ML, Jirsa VK, and Ritter P, *Scientific Reports* 7(1):3095. doi: 10.1038/s41598-017-03073-5. 2017

266) "Linking Entropy at Rest with the Underlying Structural Connectivity in the Healthy and Lesioned Brain". Victor M. Saenger, Adrián Ponce-Alvarez, Mohit Adhikari, Patric Hagmann, Gustavo Deco, Maurizio Corbetta, *Cerebral Cortex* 1-11. doi: 10.1093/cercor/bhx176. 2017

267) "Uncovering the underlying mechanisms and whole-brain dynamics of deep brain stimulation for Parkinson's disease". Victor M. Saenger, Joshua Kahan, Tom Foltynie, Karl Friston, Tipu Z. Aziz, Alexander L. Green, Tim J. van Hartevelt, Joana Cabral, Angus B. A. Stevner, Henrique M. Fernandes, Laura Mancini, John Thornton, Tarek Yousry, Patricia Limousin, Ludvic Zrinzo, Marwan Hariz, Paulo Marques, Nuno Sousa, Morten L. Kringelbach & Gustavo Deco, *Scientific Reports* 7, Article number: 9882. 2017

268) "Resting-state fMRI correlations: From link-wise unreliability to whole brain stability". Pannunzi M, Hindriks R, Bettinardi RG, Wenger E, Lisofsky N, Martensson J, Butler O, Filevich E, Becker M, Lochstet M, Kühn S, Deco G, *Neuroimage*, 157:250-262. doi: 10.1016/j.neuroimage.2017.06.006. 2017

269) "Linear distributed source modeling of local field potentials recorded with intra-cortical electrode arrays". Hindriks R, Schmiedt J, Arsiwalla XD, Peter A, Verschure PFMJ, Fries P, Schmid MC, Deco G, *PLoS One,* 12(12):e0187490. doi: 10.1371/journal.pone.0187490. 2017

270) "Novel Intrinsic Ignition Method Measuring Local-Global Integration Characterizes Wakefulness and Deep Sleep", Tagliazucchi E, Laufs H, Sanjuán A, Kringelbach ML, *eNeuro*, 4(5), UNSP e0106-17. 2017

271) "Resting state networks in empirical and simulated dynamic functional connectivity". Glomb K, Ponce-Alvarez A, Gilson M, Ritter P, Deco G, *Neuroimage*, 159:388-402. 2017

272) "Functional connectivity dynamically evolves on multiple time-scales over a static structural connectome: Models and mechanisms", Cabral, Joana; Kringelbach, Morten L.; Deco, Gustavo, *Neuroimage*, 160, 84 - 96. 2017

273) "Cognitive performance in healthy older adults relates to spontaneous switching between states of functional connectivity during rest" Cabral J., Vidaurre D., Marques P., Magalhães R., Silva Moreira P., Soares J.M., Deco G. , Sousa, N. and Kringelbach, M., *Scientific Reports* 7, 5135. 2017

274) "Effect of Field Spread on Resting-State Magneto Encephalography Functional Network Analysis: A Computational Modeling Study". Silva Pereira S, Hindriks R, Mühlberg S, Maris E, van Ede F, Griffa A, Hagmann P, Deco G, *Brain Connectivity*, 7(9):541-557. doi: 10.1089/brain.2017.0525. 2017

275) "Time-Resolved Resting-State Functional Magnetic Resonance Imaging Analysis: Current Status, Challenges, and New Directions". Keilholz S, Caballero-Gaudes C, Bandettini P, Deco G, and Calhoun V, *Brain Connectivity*, 7(8): 465-481. 2017

276) "Reply: Defining a functional network homeostasis after stroke: EEG-based approach is complementary to functional MRI", Adhikari, Mohit H.; Deco, Gustavo; Corbetta, Maurizio, *Brain*, 140, 12, e72. 2017

277) "Increased Stability and Breakdown of Brain Effective Connectivity During Slow-Wave Sleep: Mechanistic Insights from Whole-Brain Computational Modelling", Jobst BM, Hindriks R, Laufs H, Tagliazucchi E, Hahn G, Ponce-Alvarez A, Stevner ABA, Kringelbach ML, Deco G, *Scientific Reports*, 7(1):4634. 2017

278) "Do Bilinguals Automatically Activate Their Native Language When They Are Not Using It?" Costa A, Pannunzi M, Deco G, Pickering MJ, *Cognitive Science*, 41(6):1629-1644. doi: 10.1111/cogs.12434. 2017

279) "A whole-brain computational modeling approach to explain the alterations in resting-state functional connectivity during progression of Alzheimer's disease". Demirtaş M, Falcon C, Tucholka A, Gispert JD, Molinuevo JL, Deco G, *Neuroimage Clinical*, 16:343-354. 2017

280) "Connectome-harmonic decomposition of human brain activity reveals dynamical repertoire re-organization under LSD". Atasoy, Selen; Roseman, Leor; Kaelen, Mendel; Kringelbach, Morten L.; Deco, Gustavo; Carhart-Harris, Robin L., *Scientific Reports*, 7, 17661. 2017

281) "Visual stimulation quenches global alpha range activity in awake primate V4: a case study," Deneux T., Masquelier T., Bermudez M., Masson G., Deco G., Vanzetta I., *Neurophoton.* 4(3), 031222 , doi: 10.1117/1.NPh.4.3.031222. 2017

282) "Harmonic Brain Modes: A Unifying Framework for Linking Space and Time in Brain Dynamics", Atasoy, Selen; Deco, Gustavo; Kringelbach, Morten L.; Pearson, Joel, *Neuroscientist*, 24, 3, 277 - 293. doi: 10.1177/1073858417728032 2018

283) "Degenerate time-dependent network dynamics anticipate seizures in human epileptic brain", Tauste Campo A, Principe A, Ley M, Rocamora R, Deco G , '*PLoS Biology*, 16(4):e2002580. https://doi.org/10.1371/journal.pbio.2002580 2018

284) "Stereotypical modulations in dynamic functional connectivity explained by changes in BOLD variance", Glomb K, Ponce-Alvarez A, Gilson M, Ritter P, Deco G *Neuroimage*, 171:40-54. doi: 10.1016/j.neuroimage.2017.12.074. 2018

285) "Increased methylation at an unexplored glucocorticoid responsive element within exon 1(D) of NR3C1 gene is related to anxious-depressive disorders and decreased hippocampal connectivity", Palma-Gudiel, Helena; Cordova-Palomera, Aldo; Tornador, Cristian; Falcon, Carles; Bargallo, Nuria; Deco, Gustavo; Fananas, Lourdes *European Neuropsychopharmacology,* 28, 5, 579 - 588. Doi 10.1016/j.euroneuro.2018.03.015 2018

286) "Effective Connectivity in Depression", Rolls ET, Cheng W, Gilson M, Qiu J, Hu Z, Ruan H, Li Y, Huang CC, Yang AC, Tsai SJ, Zhang X, Zhuang K, Lin CP, Deco G, Xie P, and Feng J *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*, 3(2):187-197. doi: 10.1016/j.bpsc.2017.10.004. 2018

287) "Perturbation of whole-brain dynamics in silico reveals mechanistic differences between brain states", Deco G, Cabral J, Saenger VM, Boly M, Tagliazucchi E, Laufs H, Van Someren E, Jobst B, Stevner A, Kringelbach ML *Neuroimage*,169:46-56. doi: 10.1016/j.neuroimage.2017.12.009 2018

288) "The dynamics of human cognition: Increasing global integration coupled with decreasing segregation found using iEEG", Cruzat J, Deco G, Tauste-Campo A, Principe A, Costa A, Kringelbach ML, Rocamora R, *Neuroimage*, 15;172:492-505. doi: 10.1016/j.neuroimage.2018.01.064. 2018

289) "Task-related effective connectivity reveals that the cortical rich club gates cortex-wide communication',", Senden M, Reuter N, van den Heuvel MP, Goebel R, Deco G, Gilson M, *Human Brain Mapping*, 39(3):1246-1262. doi: 10.1002/hbm.23913. 2018

290) "Editorial: Metastable Dynamics of Neural Ensembles", Balaguer-Ballester, Emili; Moreno-Bote, Ruben; Deco, Gustavo; Durstewitz, Daniel, *Frontiers In Systems Neuroscience*, 11, 99. https://doi.org/10.3389/fnsys.2017.00099 2018

291) "Inferring multi-scale neural mechanisms with brain network modeling", Schirner M, McIntosh AR, Jirsa V, Deco G, Ritter P, eLife, Jan 8;7. pii: e28927. doi: 10.7554/eLife.28927 2018

292) "Scale-freeness or partial synchronization in neural mass phase oscillator networks: Pick one of two?" Daffertshofer A, Ton R, Pietras B, Kringelbach ML & Deco G 8, *Neuroimage*, 180 (Pt B):428-441 doi: 10.1016/j.neuroimage.2018.03.070 2018

293) "Whole-Brain Multimodal Neuroimaging Model Using Serotonin Receptor Maps Explains Non-linear Functional Effects of LSD" Deco G, Cruzat J, Cabral J, Knudsen GM, Carhart-Harris RL, Whybrow PC, Logothetis NK, Kringelbach ML, *Current Biology*, 28(19):3065-3074. doi: 10.1016/j.cub.2018.07.083. 2018

294) "Extracting orthogonal subject- and condition-specific signatures from fMRI data using whole-brain effective connectivity' Pallarés V, Insabato A, Sanjuán A, Kühn S, Mantini D, Deco G, Gilson M, *Neuroimage*, 178:238-254. doi: 10.1016/j.neuroimage.2018.04.070 2018

295) "Framework based on communicability and flow to analyze complex network dynamics", Gilson, M.; Kouvaris, N. E.; Deco, G.; Zamora-Lopez, G. *Physical Review E*, 97, 5, 052301. doi: 10.1103/PhysRevE.97.052301 2018

296) "Common neural signatures of psychedelics: Frequency-specific energy changes and repertoire expansion revealed using connectome-harmonic decomposition", Atasoy S, Vohryzek J, Deco G, Carhart-Harris RL, Kringelbach ML *Progress in Brain Research*, 242:7-120. doi: 10.1016/bs.pbr.2018.08.009 2018

297) "Nonparametric test for connectivity detection in multivariate autoregressive networks and application to multiunit activity data", Gilson M, Tauste Campo A, Chen X, Thiele A & Deco G *Network Neuroscience*, 1(4):357-380. doi: 10.1162/NETN_a_00019 2018

298) "Distinct criticality of phase and amplitude dynamics in the resting brain" Daffertshofer A, Ton R, Kringelbach ML, Woolrich M & Deco G, *Neuroimage*, 180(Pt B):442-447. doi: 10.1016/j.neuroimage.2018.03.002 2018

299) "Effective connectivity inferred from fMRI transition dynamics during movie viewing points to a balanced reconfiguration of cortical interactions", Gilson M, Deco G, Friston KJ, Hagmann P, Mantini D, Betti V, Romani GL, Corbetta M *Neuroimage*, 180(Pt B):534-546. doi: 10.1016/j.neuroimage.2017.09.061 2018.

300) "Resting-State Functional Connectivity Magnetic Resonance Imaging and Outcome After Acute Stroke", Puig J, Blasco G, Alberich-Bayarri A, Schlaug G, Deco G, Biarnes C, Navas-Martí M, Rivero M, Gich J, Figueras J, Torres C, Daunis-I-Estadella P, Oramas-Requejo CL, Serena J, Stinear CM, Kuceyeski A, Soriano-Mas C, Thomalla G, Essig M, Figley CR, Menon B, Demchuk A, Nael K, Wintermark M, Liebeskind DS, Pedraza S. *Stroke*. 2018 Oct;49(10):2353-2360. doi: 10.1161/STROKEAHA.118.021319 2018

301) "Source-reconstruction of the sensorimotor network from resting-state macaque electrocorticography", Hindriks R, Micheli C, Bosman CA, Oostenveld R, Lewis C, Mantini D, Fries P & Deco G *Neuroimage*, 181:347-358. doi:: 10.1016/j.neuroimage.2018.06.010 2018

302) "Resting state dynamics meets anatomical structure: Temporal multiple kernel learning (tMKL) model", Surampudi SG, Misra J, Deco G, Bapi RS, Sharma A, Roy D, *Neuroimage*, 184:609-620. doi: 10.1016/j.neuroimage.2018.09.054 2019

303) "Portraits of communication in neuronal networks", Hahn, Gerald; Ponce-Alvarez, Adrian; Deco, Gustavo; Aertsen, Ad; Kumar, Arvind *Nature Reviews Neuroscience*, 20, 2, 117 - 127. 10.1038/s41583-018-0094-0 2019

304) "Distinct modes of functional connectivity induced by movie-watching", Demirtaş M, Ponce-Alvarez A, Gilson M, Hagmann P, Mantini D, Betti V, Romani GL, Friston K, Corbetta M, Deco G, *Neuroimage*, 184:335-348. doi: 10.1016/j.neuroimage 2019

305) "Brain songs framework used for discovering the relevant timescale of the human brain", Deco G, Cruzat J, Kringelbach ML., *Nature Communications*, 10(1):583. doi: 10.1038/s41467-018-08186-7 2019

306) "Inversion of a large-scale circuit model reveals a cortical hierarchy in the dynamic resting human brain", Wang P, Kong R, Kong X, Liégeois R, Orban C, Deco G, van den Heuvel MP, Thomas Yeo BT., *Science Advances*, 5(1):eaat7854. doi: 10.1126/sciadv.aat7854 2019

307) "Traces of statistical learning in the brain's functional connectivity after artificial language exposure", Sengupta P, Burgaleta M, Zamora-López G, Basora A, Sanjuán A, Deco G, Sebastian-Galles N. *Neuropsychologia*, 124:246-253. doi: 10.1016/j.neuropsychologia.2018.12.001 2019

308) "Human consciousness is supported by dynamic complex patterns of brain signal coordination", Demertzi A, Tagliazucchi E, Dehaene S, Deco G, Barttfeld P, Raimondo F, Martial C, Fernández-Espejo D, Rohaut B, Voss HU, Schiff ND, Owen AM, Laureys S, Naccache L, Sitt JD, *Science Advances*, 5(2):eaat7603. doi: 10.1126/sciadv.aat7603 2019

309) "Neural mechanisms of vibrotactile categorization", Malone PS, Eberhardt SP, Wimmer K, Sprouse C, Klein R, Glomb K, Scholl CA, Bokeria L, Cho P, Deco G, Jiang X, Bernstein LE, Riesenhuber M., *Human Brain Mapping*, 40(10):3078-3090. doi: 10.1002/hbm.24581 2019

310) "A new computational approach to estimate whole-brain effective connectivity from functional and structural MRI, applied to language development", Hahn G, Skeide MA, Mantini D, Ganzetti M, Destexhe A, Friederici AD, Deco G, *Science Reports*, 11;9(1):8479. doi: 10.1038/s41598-019-44909-6 2019

311) "Feed-forward information and zero-lag synchronization in the sensory thalamocortical circuit are modulated during stimulus perception", Tauste Campo A, Vázquez Y, Álvarez M, Zainos A, Rossi-Pool R, Deco G, Romo R., *Proceedings National Academy of Science U S A.*, 116(15):7513-7522. doi: 10.1073/pnas.1819095116 2019

312) "Discovery of key whole-brain transitions and dynamics during human wakefulness and non-REM sleep", Stevner, A. B. A.; Vidaurre, D.; Cabral, J.; Rapuano, K.; Nielsen, S. F. V.; Tagliazucchi, E.; Laufs, H.; Vuust, P.; Deco, G.; Woolrich, M. W.; Van Someren, E.; Kringelbach, M. L. *Nature Communications,* 10, 1035. doi: 10.1038/s41467-019-08934-3 2019

313) "Dynamical exploration of the repertoire of brain networks at rest is modulated by psilocybin", Lord LD, Expert P, Atasoy S, Roseman L, Rapuano K, Lambiotte R, Nutt DJ, Deco G, Carhart-Harris RL, Kringelbach ML, Cabral J, *Neuroimage*, 25;199:127-142. doi: 10.1016/j.neuroimage.2019.05.060 2019

314) "Reliable local dynamics in the brain across sessions are revealed by whole-brain modeling of resting state activity"Donnelly-Kehoe P, Saenger VM, Lisofsky N, Kühn S, Kringelbach ML, Schwarzbach J, Lindenberger U, Deco G., *Human Brain Mapping*, 40(10):2967-2980. doi: 10.1002/hbm.24572 2019

315) 'Does Bilingualism Alter Lexical Structure? Response to Oppenheim, Wu, and Thierry (2018)' Costa, Albert; Pannunzi, Mario; Deco, Gustavo; Pickering, Martin J., *Cognitive Science*, 43, 2, UNSP e12707. doi: 10.1111/cogs.12707 2019

316) "Primate Amygdala Neurons Simulate Decision Processes of Social Partners", Grabenhorst F, Báez-Mendoza R, Genest W, Deco G, Schultz W., *Cell*, 177(4):986-998. doi: 10.1016/j.cell.2019.02.042 2019

317) "Altered ability to access a clinically relevant control network in patients remitted from major depressive disorder" Figueroa CA, Cabral J, Mocking RJT, Rapuano KM, van Hartevelt TJ, Deco G, Expert P, Schene AH, Kringelbach ML, Ruhé HG. *Human Brain Mapping*, 40(9):2771-2786. doi: 10.1002/hbm.24559 2019

318) "Awakening: Predicting external stimulation to force transitions between different brain states", Deco G. Cruzat, J, Cabral, J, Tagliazucchi, E, Laufs, H, Logothetis NK, Kringelbach, ML. *Proceedings of The National Academy of Sciences of The United States of America*, 116, 36, 18088 - 18097. doi: 10.1073/pnas.1905534116 2019

319) "Imaging Connectomics and the Understanding of Brain Diseases" Insabato A, Deco G, Gilson M., In: Kim YK. (eds) Frontiers in Psychiatry. Advances in Experimental Medicine and Biology, vol 1192, pp 139-158. Springer, Singapore. doi: 10.1007/978-981-32-9721-0_8. 2019

320) "Disrupted brain structural connectivity in Pediatric Bipolar Disorder with psychosis" Fernandes", HM, Cabral J, van Hartevelt TJ, Lord LD, Gleesborg C, Møller A, Deco G, Whybrow PC, Petrovic P, James AC, Kringelbach ML. *Science Reports*, 20;9(1):13638. doi: 10.1038/s41598-019-50093-4. 2019

321) "Characterizing the Dynamical Complexity Underlying Meditation", Escrichs A, Sanjuán A, Atasoy S, López-González A, Garrido C, Càmara E, Deco G.,. *Frontiers in System Neuroscience*, 13:27. doi: 10.3389/fnsys.2019.00027. 2019

322) "Latency analysis of resting-state BOLD-fMRI reveals traveling waves in visual cortex linking task-positive and task-negative networks", Hindriks, R.; Mantini, R.; Gravel, N.; Deco, G. *Neuroimage*, 200, 259 - 274. 10.1016/j.neuroimage.2019.06.007. 2019

323) "Network analysis of whole-brain fMRI dynamics: A new framework based on dynamic communicability". Gilson M, Kouvaris NE, Deco G, Mangin JF, Poupon C, Lefranc S, Rivière D, Zamora-López G. *Neuroimage*, 201:116007. doi: 10.1016/j.neuroimage.2019.116007. 2019

324) "Revisiting the Global Workspace: Orchestration of the functional hierarchical organisation of the human brain". Deco G, Vidaurre D, Kringelbach ML, *Nature Human Behaviour*. doi: 10.1101/859579 2020

325) "Cortical state transitions and stimulus response evolve along stiff and sloppy parameter dimensions, respectively". Ponce-Alvarez A, Mochol G, Hermoso-Mendizabal A, De la Rocha J, Deco G. *eLife* 2020;9:e53268 doi: 10.7554/eLife.53268. 2020

326) "Dynamic coupling of whole-brain neuronal and neurotransmitter systems". Kringelbach ML, Cruzat J, Cabral J, Moos Knudsen G, Carhart Harris R, Whybrow PC, Logothetis NK, Deco G. *Proceedings of the National Academy of Science* 117(17): 9566-9576. doi: 10.1073/pnas.1921475117 2020,

327) "Brain States and Transitions: Insights from Computational Neuroscience" Kringelbach ML, Deco G *Cell Reports* Vol: 32 Num: 10 doi: 10.1016/j.celrep.2020.108128 10 2020

328) 'Model-based whole-brain effective connectivity to study distributed cognition in health and disease' Gilson, Matthieu; Zamora-Lopez, Gorka; Pallares, Vicente; Adhikari, Mohit H.; Senden, Mario; Tauste Campo, Adria; Mantini, Dante; Corbetta, Maurizio; Deco, Gustavo; Insabato, Andrea, *Network Neuroscience*, 4, 2, 338 - 373. 10.1162/netn_a_00117 2020

329) 'The Aging Imageomics Study: rationale, design and baseline characteristics of the study population', Mechanisms Of Ageing And Development" Puig, Josep; Biarnes, Carles; Pedraza, Salvador; Vilanova, Joan C.; Pamplona, Reinald; Manuel Fernandez-Real, Jose; Brugada, Ramon; Ramos, Rafel; Coll-de-Tuero, Gabriel; Calvo-Perxas, Laia; Serena, Joaquin; Ramio-Torrenta, Lluis; Gich, Jordi; Gallart, Lluis; Portero-Otin, Manel; Alberich-Bayarri, Angel; Jimenez-Pastor, Ana; Camacho-Ramos, Eduardo; Mayneris-Perxachs, Jordi; Pineda, Victor; Font, Raquel; Prats-Puig, Anna; Gacto, Mariano-Luis; Deco, Gustavo; Escrichs, Anira; Clotet, Bonaventura; Paredes, Roger; Negredo, Eugenia; Triaire, Bruno; Rodriguez, Manuel; Heredia-Escamez, Alberto; Coronado, Rafael; de Graaf, Wolter; Prevost, Valentin; Mitulescu, Anca; Daunis-I-Estadella, Pepus; Thio-Henestrosa, Santiago; Miralles, Felip; Ribas-Ripoll, Vicent; Puig-Domingo, Manel; Essig, Marco; Figley, Chase R.; Figley, Teresa D.; Albensi, Benedict; Ashraf, Ahmed; Reiber, Johan H. C.; Schifitto, Giovanni; Nasir Uddin, Md; Leiva-Salinas, Carlos; Wintermark, Max; Nael, Kambiz; Vilalta-Franch, Joan; Barretina, Jordi; Garre-Olmo, Josep, *Mechanisms of Ageing And Development*, 189, 111257. doi: 10.1016/j.mad.2020.111257 2020

330) "Low entropy map of brain oscillatory activity identifies spatially localized events: A new method for automated epilepsy focus prediction", Vila-Vidal, Manel; Perez Enriquez, Carmen; Principe, Alessandro; Rocamora, Rodrigo; Deco, Gustavo; Tauste Campo, Adria *Neuroimage*, 208, 116410.doi 10.1016/j.neuroimage.2019.116410 2020

331) 'Altered Brain Network Dynamics in Stroke Predict Behavior', Favaretto, Chiara; Allegra, Michele; Brovelli, Andrea; Deco, Gustavo; Corbetta, Maurizio, *Annals of Neurology*, 88, S81 - S81. 2020

332) 'Breakdown of Whole-brain Dynamics in Preterm-born Children', Padilla, Nelly; Saenger, Victor M.; van Hartevelt, Tim J.; Fernandes, Henrique M.; Lennartsson, Finn; Andersson, Jesper L. R.; Kringelbach, Morten; Deco, Gustavo; Aden, Ulrika, *Cerebral Cortex,* 30, 3, 1159 - 1170. 10.1093/cercor/bhz156 2020

333) "Propagation of BOLD Activity Reveals Task-dependent Directed Interactions Across Human Visual Cortex" Gravel, Nicolas; Renken, Remco J.; Harvey, Ben M.; Deco, Gustavo; Cornelissen, Frans W.; Gilson, Matthieu, *Cerebral Cortex*, 30, 11, 5899 - 5914. 2020

334) "Harmonic waves as the fundamental principle underlying temporo-spatial dynamics of brain and mind Comment on "Is temporo-spatial dynamics the "common currency" of brain and mind? In Quest of "Spatiotemporal Neuroscience"" Georg Northoff et al.', Atasoy, Selen; Deco, Gustavo; Kringelbach, Morten L., *Physics of Life Reviews*, 33, 67 - 69. 2020

335) "Visual-reward driven changes of movement during action execution" Marti-Marca, Angela; Deco, Gustavo; Cos, Ignasi, *Scientific Reports*, 10, 1, 15527 doi 10.1038/s41598-020-72220-2 2020

336) 'Reduced spatiotemporal brain dynamics are associated with increased depressive symptoms after a relationship breakup.' Alonso Martinez, Sonsoles; Marsman, Jan-Bernard C; Kringelbach, Morten L; Deco, Gustavo; Ter Horst, Gert J, *Neuroimage. Clinical*, 27, 102299. doi: 10.1016/j.nicl.2020.102299 2020

337) 'Uncovering the spatiotemporal scales of common neuro-mental constructs Comment on "Is temporo-spatial dynamics the 'common currency' of brain and mind? In Quest of 'Spatiotemporal Neuroscience'" Vila-Vidal, Manel; Capouskova, Katerina; Atasoy, Selen; Kringelbach, Morten L.; Deco, Gustavo, by Georg Northoff et al.', *Physics of Life Reviews*, 33, 64 – 66 2020

338) 'Ghost Attractors in Spontaneous Brain Activity: Recurrent Excursions Into Functionally-Relevant BOLD Phase-Locking States.' Vohryzek, Jakub; Deco, Gustavo; Cessac, Bruno; Kringelbach, Morten L; Cabral, Joana, *Frontiers In Systems Neuroscience*, 14, 20 - 20. doi: 10.3389/fnsys.2020.00020 2020

339) 'The Dynamics of Functional Brain Networks Associated with Depressive Symptoms in a Nonclinical Sample' Alonso Martinez, Sonsoles; Deco, Gustavo; Ter Horst, Gert J.; Cabral, Joana, *Frontiers In Neural Circuits*, 14, 570583. doi: 10.3389/fncir.2020.570583 2020

340) 'Editorial: The Embodied Brain: Computational Mechanisms of Integrated Sensorimotor Interactions With a Dynamic Environment', Senden, Mario; Peters, Judith; Roehrbein, Florian; Deco, Gustavo; Goebel, Rainer, *Frontiers In Computational Neuroscience*, 14, 53. 2020

341) 'Lifespan associated global patterns of coherent neural communication.', Sahoo, Bikash; Pathak, Anagh; Deco, Gustavo; Banerjee, Arpan; Roy, Dipanjan, *Neuroimage*, 216, 116824 - 116824. doi 10.1016/j.neuroimage.2020.116824 2020

342) "Turbulent-like dynamics in the human brain" Deco, G, Kringlebach, M, *Cell Reports* Volume 33, Issue 10, 108471, doi: 10.1016/j.celrep.2020.108471 December 08, 2020

343) "Effective connectivity in autism" Rolls ET, Zhou Y, Cheng W, Gilson M, Deco G, Feng J., *Autism Res*.;13(1):32-44. doi: 10.1002/aur.2235 Jan 2020

344) "Beyond the disconnectivity hypothesis of schizophrenia", Rolls ET, Cheng W, Gilson M, Gong W, Deco G, Lo CZ, Yang AC, Tsai SJ, Liu ME, Lin CP, Feng J., *Cereb Cortex*. 30(3):1213-1233. doi: 10.1093/cercor/bhz161. Mar 14, 2020

345) "Human brain connectivity: Clinical applications for clinical neurophysiology'", Hallett M, de Haan W, Deco G, Dengler R, Di Iorio R, Gallea C, Gerloff C, Grefkes C, Helmich RC, Kringelbach ML, Miraglia F, Rektor I, Strýček O, Vecchio F, Volz LJ, Wu T, Rossini PM. 2020, *Clinical Neurophysiology*, 131(7):1621-1651. doi: 10.1016/j.clinph.2020.03.031 2020

346) "Generative Embeddings of Brain Collective Dynamics Using Variational Autoencoders", Perl YS, Bocaccio H, Pérez-Ipiña I, Zamberlán F, Piccinini J, Laufs H, Kringelbach M, Deco G, Tagliazucchi E., *Physical Review Letters*, 125(23):238101. 2020

347) "Data augmentation based on dynamical systems for the classification of brain states", Sanz Perl, Yonatan; Pallavicini, Carla; Perez Ipina, Ignacio; Kringelbach, Morten; Deco, Gustavo; Laufs, Helmut; Tagliazucchi, Enzo, *Chaos Solitons & Fractals*, 139, 110069. doi: 10.1016/j.chaos.2020.110069 2020

348) "The effect of noise on the synchronization dynamics of the Kuramoto model on a large human connectome graph" Odor, Geza; Kelling, Jeffrey; Deco, Gustavo, *Neurocomputing*, 461, 696 - 704. doi: 10.1016/j.neucom.2020.04.161 2021

349) "Increased brain atrophy and lesion load is associated with stronger lower alpha MEG power in multiple sclerosis patients", Van Schependom J, Vidaurre D, Costers L, Sjøgård M, Sima DM, Smeets D, D'hooghe MB, D'haeseleer M, Deco G, Wens V, De Tiège X, Goldman S, Woolrich M, Nagels G, *Neuroimage Clinical*, 30:102632. doi 10.1016/j.nicl.2021.102632 2021

350) "Leonardo da Vinci and the search for order in neuroscience", Deco, Gustavo; Kemp, Martin; Kringelbach, Morten L., *Current Biology*, 31, 11, R704 - R709. doi: 10.1016/j.cub.2021.03.098 2021

351) "Signature of consciousness in brain-wide synchronization patterns of monkey and human fMRI signals", Hahn, Gerald; Zamora-Lopez, Gorka; Uhrig, Lynn; Tagliazucchi, Enzo; Laufs, Helmut; Mantini, Dante; Kringelbach, Morten L.; Jarraya, Bechir; Deco, Gustavo, *Neuroimage*, 226, 117470. doi: 10.1016/j.neuroimage.2020.117470 2021

352) "Sensory-motor cortices shape functional connectivity dynamics in the human brain", Kong, Xiaolu; Kong, Ru; Orban, Csaba; Wang, Peng; Zhang, Shaoshi; Anderson, Kevin; Holmes, Avram; Murray, John D.; Deco, Gustavo; van den Heuvel, Martijn; Yeo, B. T. Thomas, *Nature Communications*, 12, 1, 6373. doi: 10.1038/s41467-021-26704-y 2021

353) "Classification of Complex Emotions Using EEG and Virtual Environment: Proof of Concept and Therapeutic Implication", De Filippi, Eleonora; Wolter, Mara; Melo, Bruno R. P.; Tierra-Criollo, Carlos J.; Bortolini, Tiago; Deco, Gustavo; Moll, Jorge, Frontiers In *Human Neuroscience*, 15, 711279. doi 10.3389/fnhum.2021.711279 2021

354) "Perturbations in dynamical models of whole-brain activity dissociate between the level and stability of consciousness". Sanz Perl Y, Pallavicini C, Pérez Ipiña I, Demertzi A, Bonhomme V, Martial C, Panda R, Annen J, Ibañez A, Kringelbach M, Deco G, Laufs H, Sitt J, Laureys S, Tagliazucchi E PLoS *Computational Biology*, 17(7):e1009139. doi: 10.1371/journal.pcbi.1009139 2021

355) "Increased sensitivity to strong perturbations in a whole-brain model of LSD", Jobst, Beatrice M.; Atasoy, Selen; Ponce-Alvarez, Adrian; Sanjuan, Ana; Roseman, Leor; Kaelen, Mendel; Carhart-Harris, Robin; Kringelbach, Morten L.; Deco, Gustavo, *Neuroimage*, 230, 117809. doi: 10.1016/j.neuroimage.2021.117809 2021

356) "Modelling on the very large-scale connectome", Odor, Geza; Gastner, Michael T.; Kelling, Jeffrey; Deco, Gustavo, *Journal Of Physics-complexity,* 2, 4, 045002. 2021

357) "Noise-driven multistability vs deterministic chaos in phenomenological semi-empirical models of whole-brain activity" Piccinini J, Ipiñña IP, Laufs H, Kringelbach M, Deco G, Sanz Perl Y, Tagliazucchi E, *Chaos*, 31(2):023127. doi: 10.1063/5.0025543 2021

358) "Brain Connectivity Studies on Structure-Function Relationships: A Short Survey with an Emphasis on Machine Learning", Wein, Simon; Deco, Gustavo; Tome, Ana Maria; Goldhacker, Markus; Malloni, Wilhelm M.; Greenlee, Mark W.; Lang, Elmar W., *Computational Intelligence And Neuroscience*, 2021, 5573740. doi: 10.1155/2021/5573740 2021

359) "Ephaptic coupling in white matter fibre bundles modulates axonal transmission delays", Schmidt, Helmut; Hahn, Gerald; Deco, Gustavo; Knoesche, Thomas R., *Plos Computational Biology*, 17, 2, e1007858. doi: 10.1371/journal.pcbi.1007858. 2021

360) "Functional harmonics reveal multi-dimensional basis functions underlying cortical organization", Glomb, Katharina; Kringelbach, Morten L.; Deco, Gustavo; Hagmann, Patric; Pearson, Joel; Atasoy, Selen, *Cell Reports*, 36, 8, 109554. doi: 10.1016/j.celrep.2021.109554 2021

361) "Circuit mechanisms for the chemical modulation of cortex-wide network interactions and behavioral variability", Pfeffer T, Ponce-Alvarez A, Tsetsos K, Meindertsma T, Gahnström CJ, van den Brink RL, Nolte G, Engel AK, Deco G, Donner TH, *Science Advances*, 7(29):eabf5620. 2021

362) "Bridging the gap between single receptor type activity and whole-brain dynamics", Jancke, Dirk; Herlitze, Stefan; Kringelbach, Morten L.; Deco, Gustavo, *Febs Journal* doi: 10.1111/febs.15855 2021

363) "mTOR-related synaptic pathology causes autism spectrum disorder-associated functional hyperconnectivity",Pagani, Marco; Barsotti, Noemi; Bertero, Alice; Trakoshis, Stavros; Ulysse, Laura; Locarno, Andrea; Miseviciute, Ieva; De Felice, Alessia; Canella, Carola; Supekar, Kaustubh; Galbusera, Alberto; Menon, Vinod; Tonini, Raffaella; Deco, Gustavo; Lombardo, Michael V.; Pasqualetti, Massimo; Gozzi, Alessandro, *Nature Communications*, 12, 1, 6084. doi: 10.1038/s41467-021-26131-z. 2021

364) "Decoding brain states on the intrinsic manifold of human brain dynamics across wakefulness and sleep", Rue-Queralt, Joan; Stevner, Angus; Tagliazucchi, Enzo; Laufs, Helmut; Kringelbach, Morten L.; Deco, Gustavo; Atasoy, Selen, *Nature Communications Biology*, 4, 1, 854. doi: 10.1038/s42003-021-02369-7. 2021

365) "Hierarchical disruption in the cortex of anesthetized monkeys as a new signature of consciousness loss", Signorelli, Camilo Miguel; Uhrig, Lynn; Kringelbach, Morten; Jarraya,

Bechir; Deco, Gustavo, *Neuroimage*, 227, 117618. doi: 10.1016/j.neuroimage.2020.117618. 2021

366) "Loss of consciousness reduces the stability of brain hubs and the heterogeneity of brain dynamics", Lopez-Gonzalez, Ane; Panda, Rajanikant; Ponce-Alvarez, Adrian; Zamora-Lopez, Gorka; Escrichs, Anira; Martial, Charlotte; Thibaut, Aurore; Gosseries, Olivia; Kringelbach, Morten L.; Annen, Jitka; Laureys, Steven; Deco, Gustavo, *Communications Biology,* 4, 1, 1037. doi 10.1038/s42003-021-02537-9. 2021

367) "Genetic influences on hub connectivity of the human connectome", Arnatkeviciute A, Fulcher BD, Oldham S, Tiego J, Paquola C, Gerring Z, Aquino K, Hawi Z, Johnson B, Ball G, Klein M, Deco G, Franke B, Bellgrove MA, Fornito A, *Nature Communications*,12(1):4237. /doi.org/10.1038/s41467-021-24306-2 2021

368) "Whole-Brain Dynamics in Aging: Disruptions in Functional Connectivity and the Role of the Rich Club", Escrichs, Anira; Biarnes, Carles; Garre-Olmo, Josep; Fernandez-Real, Jose Manuel; Ramos, Rafel; Pamplona, Reinald; Brugada, Ramon; Serena, Joaquin; Ramio-Torrenta, Lluis; Coll-De-Tuero, Gabriel; Gallart, Luis; Barretina, Jordi; Vilanova, Joan C.; Mayneris-Perxachs, Jordi; Essig, Marco; Figley, Chase R.; Pedraza, Salvador; Puig, Josep; Deco, Gustavo, *Cerebral Cortex*, 31, 5, 2466 - 2481. doi: 10.1093/cercor/bhaa367. 2021

369) "Revisiting the global workspace orchestrating the hierarchical organization of the human brain", Deco, Gustavo; Vidaurre, Diego; Kringelbach, Morten L., *Nature Human Behaviour*, 5(4):497-511. doi: 10.1038/s41562-020-01003-6 2021

370) "Rare long-range cortical connections enhance human information processing", Deco, Gustavo; Perl, Yonathan Sanz; Vuust, Peter; Tagliazucchi, Enzo; Kennedy, Henry; Kringelbach, Morten L., *Current Biology*, 31, 20, 4436 - +. doi: 10.1016/j.cub.2021.07.064. 2021

371) "Capturing the non-stationarity of whole-brain dynamics underlying human brain states", Galadi, J. A.; Pereira, S. Silva; Perl, Y. Sanz; Kringelbach, M. L.; Gayte, I.; Laufs, H.; Tagliazucchi, E.; Langa, J. A.; Deco, G., *Neuroimage*, 244, 118551. doi: 10.1016/j.neuroimage.2021.118551. 2021

372) 'Dynamical consequences of regional heterogeneity in the brain's transcriptional landscape', Deco, Gustavo; Kringelbach, Morten L.; Arnatkeviciute, Aurina; Oldham, Stuart; Sabaroedin, Kristina; Rogasch, Nigel C.; Aquino, Kevin M.; Fornito, Alex, *Science Advances,* 7, 29, eabf4752. doi: 10.1126/sciadv.abf4752. 2021

373) 'The phase of Theta oscillations modulates successful memory formation at encoding', Cruzat, Josephine; Torralba, Mireia; Ruzzoli, Manuela; Fernandez, Alba; Deco, Gustavo; Soto-Faraco, Salvador, *Neuropsychologia*, 154, 107775. doi: 10.1016/j.neuropsychologia.2021.107775. 2021

374) "Nonequilibrium brain dynamics as a signature of consciousness", Sanz Perl Y, Bocaccio H, Pallavicini C, Pérez-Ipiña I, Laureys S, Laufs H, Kringelbach M, Deco G, Tagliazucchi E. *Phys Rev* E. Jul;104(1-1):014411. doi: 10.1103/PhysRevE.104.01441. 2021

375) "Revealing the Relevant Spatiotemporal Scale Underlying Whole-Brain Dynamics", Kobeleva, Xenia; Lopez-Gonzalez, Ane; Kringelbach, Morten L.; Deco, Gustavo, *Frontiers In Neuroscience*, 15, 715861. 2021

376) Bonetti, L.; Brattico, E.; Carlomagno, F.; Donati, G.; Cabral, J.; Haumann, N. T.; Deco, G.; Vuust, P.; Kringelbach, M. L., "Rapid encoding of musical tones discovered in whole-brain connectivity", *Neuroimage*, 245, 118735. 2021

377) "The Menstrual Cycle Modulates Whole-Brain Turbulent Dynamics", De Filippi, Eleonora; Uribe, Carme; Avila-Varela, Daniela S.; Martinez-Molina, Noelia; Gashaj, Venera; Pritschet, Laura; Santander, Tyler; Jacobs, Emily G.; Kringelbach, Morten L.; Sanz Perl, Yonatan; Deco, Gustavo; Escrichs, Anira, Frontiers In *Neuroscience*, 15, 753820. 2021

378) "Effective connctivity extracts clinically relevant prognostic information from resting state activity in stroke", Adhikari, Mohit H.; Griffis, Joseph; Siegel, Joshua S.; de Schotten, Michel Thiebaut; Deco, Gustavo; Instabato, Andrea; Gilson, Matthieu; Corbetta, Maurizio, *Brain Communications*, 3, 4, fcab233. 2021

379) "On the intersection between data quality and dynamical modelling of large-scale fMRI signals", Aquino, Kevin M.; Fulcher, Ben; Oldham, Stuart; Parkes, Linden; Gollo, Leonardo; Deco, Gustavo; Fornito, Alex, *Neuroimage*, 256, 119051. 2022

380) "The human language effective connectome", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Neuroimage*, 258, 119352. 2022

381) "Brain simulation as a cloud service: The Virtual Brain on EBRAINS", Schirner, Michael; Domide, Lia; Perdikis, Dionysios; Triebkorn, Paul; Stefanovski, Leon; Pai, Roopa; Prodan, Paula; Valean, Bogdan; Palmer, Jessica; Langford, Chloe; Blickensdoerfer, Andre; van der Vlag, Michiel; Diaz-Pier, Sandra; Peyser, Alexander; Klijn, Wouter; Pleiter, Dirk; Nahm, Anne; Schmid, Oliver; Woodman, Marmaduke; Zehl, Lyuba; Fousek, Jan; Petkoski, Spase; Kusch, Lionel; Hashemi, Meysam; Marinazzo, Daniele; Mangin, Jean-Francois; Floeel, Agnes; Akintoye, Simisola; Stahl, Bernd Carsten; Cepic, Michael; Johnson, Emily; Deco, Gustavo; McIntosh, Anthony R.; Hilgetag, Claus C.; Morgan, Marc; Schuller, Bernd; Upton, Alex; McMurtrie, Colin; Dickscheid, Timo; Bjaalie, Jan G.; Amunts, Katrin; Mersmann, Jochen; Jirsa, Viktor; Ritter, Petra, *Neuroimage*, 251, 118973. 2022

382) "Metastable oscillatory modes emerge from synchronization in the brain spacetime connectome", Cabral, Joana; Castaldo, Francesca; Vohryzek, Jakub; Litvak, Vladimir; Bick, Christian; Lambiotte, Renaud; Friston, Karl; Kringelbach, Morten L.; Deco, Gustavo, *Communications Physics*, 5, 1, 184. 2022

383) "Temporal irreversibility of neural dynamics as a signature of consciousness", Alethia de la Fuente, Laura; Zamberlan, Federico; Bocaccio, Hernan; Kringelbach, Morten; Deco, Gustavo; Sanz Perl, Yonatan; Pallavicini, Carla; Tagliazucchi, Enzo, *Cerebral Cortex* 2022

384) "Psychedelic resting-state neuroimaging: A review and perspective on balancing replication and novel analyses", McCulloch, Drummond E-Wen; Knudsen, Gitte Moos; Barrett, Frederick Streeter; Doss, Manoj K.; Carhart-Harris, Robin Lester; Rosas, Fernando E.; Deco, Gustavo; Kringelbach, Morten L.; Preller, Katrin H.; Ramaekers, Johannes G.; Mason,

Natasha L.; Milller, Felix; Fisher, Patrick MacDonald, *Neuroscience And Biobehavioral Reviews*, 138, 104689. 2022

385) "Unifying turbulent dynamics framework distinguishes different brain states", Escrichs, Anira; Perl, Yonatan Sanz; Uribe, Carme; Camara, Estela; Turker, Basak; Pyatigorskaya, Nadya; Lopez-Gonzalez, Ane; Pallavicini, Carla; Panda, Rajanikant; Annen, Jitka; Gosseries, Olivia; Laureys, Steven; Naccache, Lionel; Sitt, Jacobo D.; Laufs, Helmut; Tagliazucchi, Enzo; Kringelbach, Morten L.; Deco, Gustavo, *Communications Biology*, 5, 1, 638. 2022

386) "Large-scale societal dynamics are reflected in human mood and brain", Lebedev, Alexander, V; Abe, Christoph; Acar, Kasim; Deco, Gustavo; Kringelbach, Morten L.; Ingvar, Martin; Petrovic, Predrag, *Scientific Reports*, 12, 1, 4646. 2022

387) "Microbiota alterations in proline metabolism impact depression", Mayneris-Perxachs, Jordi; Castells-Nobau, Anna; Arnoriaga-Rodriguez, Maria; Martin, Miquel; de la Vega-Correa, Lisset; Zapata, Cristina; Burokas, Aurelijus; Blasco, Gerard; Coll, Claudia; Escrichs, Anira; Biarnes, Carles; Maria Moreno-Navarrete, Jose; Puig, Josep; Garre-Olmo, Josep; Ramos, Rafel; Pedraza, Salvador; Brugada, Ramon; Carles Vilanova, Joan; Serena, Joaquin; Gich, Jordi; Ramio-Torrenta, Lluis; Perez-Brocal, Vicente; Moya, Andres; Pamplona, Reinald; Sol, Joaquim; Jove, Mariona; Ricart, Wifredo; Portero-Otin, Manuel; Deco, Gustavo; Maldonado, Rafael; Manuel Fernandez-Real, Jose, *Cell Metabolism*, 34, 5, 681 - +.2022

388) "Toward noninvasive brain stimulation 2.0 in Alzheimer's disease", Menardi, Arianna; Rossi, Simone; Koch, Giacomo; Hampel, Harald; Vergallo, Andrea; Nitsche, Michael A.; Stern, Yaakov; Borroni, Barbara; Cappa, Stefano F.; Cotelli, Maria; Ruffini, Giulio; El-Fakhri, Georges; Rossini, Paolo M.; Dickerson, Brad; Antal, Andrea; Babiloni, Claudio; Lefaucheur, Jean-Pascal; Dubois, Bruno; Deco, Gustavo; Ziemann, Ulf; Pascual-Leone, Alvaro; Santarnecchi, Emiliano, *Ageing Research Reviews*, 75, 101555. 2022

389) "Macroscopic Quantities of Collective Brain Activity during Wakefulness and Anesthesia", Ponce-Alvarez, Adrian; Uhrig, Lynn; Deco, Nikolas; Signorelli, Camilo M.; Kringelbach, Morten L.; Jarraya, Bechir; Deco, Gustavo, *Cerebral Cortex*, 32, 2, 298 - 311. 2022

390) "The human posterior parietal cortex: effective connectome, and its relation to function", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Cerebral Cortex*, .2022

391) "Differences in the critical dynamics underlying the human and fruit-fly connectome", Odor, Geza; Deco, Gustavo; Kelling, Jeffrey, *Physical Review Research*, 4, 2, 023057. 2022

392) "The effect of external stimulation on functional networks in the aging healthy human brain", Escrichs, Anira; Sanz Perl, Yonatan; Martinez-Molina, Noelia; Biarnes, Carles; Garre-Olmo, Josep; Manuel Fernandez-Real, Jose; Ramos, Rafel; Marti, Ruth; Pamplona, Reinald; Brugada, Ramon; Serena, Joaquin; Ramio-Torrenta, Lluis; Coll-De-Tuero, Gabriel; Gallart, Luis; Barretina, Jordi; Vilanova, Joan C.; Mayneris-Perxachs, Jordi; Saba, Luca; Pedraza, Salvador; Kringelbach, Morten L.; Puig, Josep; Deco, Gustavo, *Cerebral Cortex*. 2022

393) "Multiple cortical visual streams in humans", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Cerebral Cortex*, 2022

394) "The INSIDEOUT framework provides precise signatures of the balance of intrinsic and extrinsic dynamics in brain states", Deco, Gustavo; Perl, Yonatan Sanz; Bocaccio, Hernan; Tagliazucchi, Enzo; Kringelbach, Morten L., *Communications Biology*, 5, 1, 572. 2022

395) "The human orbitofrontal cortex, vmPFC, and anterior cingulate cortex effective connectome: emotion, memory, and action", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Cerebral Cortex* 2022

396) "Rate and oscillatory switching dynamics of a multilayer visual microcircuit model", Hahn, Gerald; Kumar, Arvind; Schmidt, Helmut; Knoesche, Thomas R.; Deco, Gustavo, *Elife*, 11, e77594. 2022

397) "Edge-centric analysis of stroke patients: An alternative approach for biomarkers of lesion recovery", Idesis, Sebastian; Faskowitz, Joshua; Betzel, Richard F.; Corbetta, Maurizio; Sporns, Olaf; Deco, Gustavo, *Neuroimage-clinical*, 35, 103055. 2022

398) "Meditation-induced effects on whole-brain structural and effective connectivity", De Filippi, Eleonora; Escrichs, Anira; Camara, Estela; Garrido, Cesar; Marins, Theo; Sanchez-Fibla, Marti; Gilson, Matthieu; Deco, Gustavo, *Brain Structure & Function*, 2022

399) "An integrated resource for functional and structural connectivity of the marmoset brain", Tian X, Chen Y, Majka P, Szczupak D, Perl YS, Yen CC, Tong C, Feng F, Jiang H, Glen D, Deco G, Rosa MGP, Silva AC, Liang Z, Liu C, *Nature Communications*, 13(1):7416. 2022

400) "Subcortical-cortical dynamical states of the human brain and their breakdown in stroke", Favaretto C, Allegra M, Deco G, Metcalf NV, Griffis JC, Shulman GL, Brovelli A, Corbetta M, *Nature Communications*, 13(1):5069, 2022

401) "Modes of cognition: Evidence from metastable brain dynamics", Capouskova, Katerina; Kringelbach, Morten L.; Deco, Gustavo, *Neuroimage*, 260, 119489, 2022

402) "Multiple cortical visual streams in humans", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Cerebral Cortex*, 2022

403) "How can Waddington-like landscapes facilitate insights beyond developmental biology?", Shakiba N, Li C, Garcia-Ojalvo J, Cho KH, Patil K, Walczak A, Liu YY, Kuehn S, Nie Q, Klein A, Deco G, Kringelbach M, Iyer-Biswas S, *Cell System*, 13(1):4-9. DOI: 10.1016/j.cels.2021.12.003., 2022

404) "Effects of classic psychedelic drugs on turbulent signatures in brain dynamics", Cruzat, Josephine; Sanz Perl, Yonatan; Escrichs, Anira; Vohryzek, Jakub; Timmermann, Christopher; Roseman, Leor; Luppi, Andrea, I; Ibanez, Agustin; Nutt, David; Carhart-Harris, Robin; Tagliazucchi, Enzo; Deco, Gustavo; Kringelbach, Morten L., *Network Neuroscience*, 6, 4, 1104 - 1124. 2022

405) "Receptor-informed network control theory links LSD and psilocybin to a flattening of the brain's control energy landscape", Singleton SP, Luppi AI, Carhart-Harris RL, Cruzat J, Roseman L, Nutt DJ, Deco G, Kringelbach ML, Stamatakis EA, Kuceyeski A, *Nature Communications*, 13(1):5812. 2022

406) "Human Amygdala compared to Orbitofrontal Cortex Connectivity, and Emotion". Rolls ET, Deco G, Huang CC, Feng J, *Progress in Neurobiology*,102385. 2022

407) "From brain-body function to conscious interactions". Signorelli CM, Boils JD, Tagliazucchi E, Jarraya B, Deco G, *Neuroscience Biobehavioural Review*, 141:104833. 2022

408) "Strength-dependent perturbation of whole-brain model working in different regimes reveals the role of fluctuations in brain dynamics", Sanz Perl Y, Escrichs A, Tagliazucchi E, Kringelbach ML, Deco G, PLoS *Computational Biology*, 18(11):e1010662. 2022

409) "The effective connectivity of the human hippocampal memory system", Rolls ET, Deco G, Huang CC, Feng J., *Cerebral Cortex*, 32(17):3706-3725. doi.org/10.1093/cercor/bhab442, 2022

410) "Functional network antagonism and consciousness", Demertzi, Athena; Kucyi, Aaron; Ponce-Alvarez, Adrian; Keliris, Georgios A.; Whitfield-Gabrieli, Susan; Deco, Gustavo, *Network Neuroscience*, 6, 4, 998 - 1009. 2022

411) "One session of fMRI-Neurofeedback training on motor imagery modulates whole-brain effective connectivity and dynamical complexity", De Filippi E, Marins T, Escrichs A, Gilson M, Moll J, Tovar-Moll F, Deco G, *Cerebral Cortex Communications*, 3(3):tgac027. 2022

412) "Prefrontal and somatosensory-motor cortex effective connectivity in humans", Rolls, Edmund T.; Deco, Gustavo; Huang, Chu-Chung; Feng, Jianfeng, *Cerebral Cortex*, 2022

413) "Whole-brain dynamics differentiate among cisgender and transgender individuals", Uribe C, Escrichs A, de Filippi E, Sanz-Perl Y, Junque C, Gomez-Gil E, Kringelbach ML, Guillamon A, Deco G., *Human Brain Mapping*, 43(13):4103-4115. 2022

414) "Disruption in structural-functional network repertoire and time-resolved subcortical fronto-temporoparietal connectivity in disorders of consciousness", Panda R, Thibaut A, Lopez-Gonzalez A, Escrichs A, Bahri MA, Hillebrand A, Deco G, Laureys S, Gosseries O, Annen J, Tewarie P, *Elife*, 11:e77462. 2022

415) "Complexity changes in functional state dynamics suggest focal connectivity reductions", Blair DS, Soriano-Mas C, Cabral J, Moreira P, Morgado P, Deco. *Frontiers Human Neuroscience*, 16:958706. 2022

416) "Inferring the dynamical effects of stroke lesions through whole-brain modeling", Idesis, Sebastian; Favaretto, Chiara; V. Metcalf, Nicholas; Griffis, Joseph C.; Shulman, Gordon L.; Corbetta, Maurizio; Deco, Gustavo, *Neuroimage-clinical*, 36, 103233. 2022

417) "What lies underneath: Precise classification of brain states using time-dependent topological structure of dynamics", Soler-Toscano F, Galadí JA, Escrichs A, Sanz Perl Y, López-González A, Sitt JD, Annen J, Gosseries O, Thibaut A, Panda R, Esteban FJ, Laureys S, Kringelbach ML, Langa JA, Deco G, *PLoS Computational Biology*, 18(9):e1010412. 2022

418) "Dynamic primitives of brain network interaction", Schirner M, Kong X, Yeo BTT, Deco G, Ritter P., *Neuroimage*, 250:118928. 2022

419) "Understanding brain states across spacetime informed by whole-brain modelling", Vohryzek J, Cabral J, Vuust P, Deco G, Kringelbach ML, *Philos Trans A Math Phys Eng Sci.*, 380(2227):20210247. 2022

420) "Dynamical models to evaluate structure-function relationships in network neuroscience", Luppi AI, Cabral J, Cofre R, Destexhe A, Deco G, Kringelbach ML, *Nature Review Neuroscience*, 23(12):767-768. 2022

421) 'Auditory cortical connectivity in humans', Rolls ET, Rauschecker JP, Deco G, Huang CC & Feng J, *Cerebral Cortex* .2023 doi: 10.1093/cercor/bhac496

422) 'The impact of regional heterogeneity in whole-brain dynamics in the presence of oscillations', Perl, Yonatan Sanz; Zamora-Lopez, Gorka; Montbrio, Ernest; Monge-Asensio, Marti; Vohryzek, Jakub; Fittipaldi, Sol; Campo, Cecilia Gonzalez; Moguilner, Sebastian; Ibanez, Agustin; Tagliazucchi, Enzo; Yeo, B. T. Thomas; Kringelbach, Morten L.; Deco, Gustavo, *Network Neuroscience*, 7, 2, 632 - 660. 2023 doi: 10.1162/netn_a_00299

423) 'The lack of temporal brain dynamics asymmetry as a signature of impaired consciousness states', Elvira G-Guzmán, Yonatan Sanz Perl, Jakub Vohryzek, Anira Escrichs, Dragana Manasova, Başak Türker, Enzo Tagliazucchi, Morten Kringelbach, Jacobo D. Sitt and Gustavo Deco., *Interface Focus*, 13, 3, 20220086.2023 doi: 10.1098/rsfs.2022.0086

424) 'LSD-induced increase of Ising temperature and algorithmic complexity of brain dynamics', Giulio Ruffini ,Giada Damiani,Diego Lozano-Soldevilla,Nikolas Deco,Fernando E. Rosas,Narsis A. Kiani,Adrián Ponce-Alvarez,Morten L. Kringelbach,Robin Carhart-Harris,Gustavo Deco., *Plos Computational Biology*, 19, 2, e1010811. 2023 doi: 10.1371/journal.pcbi.1010811

425) 'Toward naturalistic neuroscience: Mechanisms underlying the flattening of brain hierarchy in movie-watching compared to rest and task', Kringelbach ML, Perl YS, Tagliazucchi E & Deco G , Science Advances, 9, 2, eade6049. 2023 doi: 10.1126/sciadv.ade6049

426) "Using in silico perturbational approach to identify critical areas in schizophrenia" Ludovica Mana, Manel Vila-Vidal, Charlotte Köckeritz, Kevin Aquino, Alex Fornito, Morten L Kringelbach, Gustavo Deco, *Cerebral Cortex*, Volume 33, Issue 12, 15, Pages 7642–7658, 2023 doi: 10.1093/cercor/bhad067

427) 'Critical scaling of whole-brain resting-state dynamics', Ponce-Alvarez, Adrian; Kringelbach, Morten L.; Deco, Gustavo, *Communications Biology*, 6, 1, 627.2023 doi: 10.1038/s42003-023-05001-y

428) "Dynamic sensitivity analysis: Defining personalised strategies to drive brain state transitions via whole brain modelling', Jakub Vohryzek, Joana Cabral, Francesca Castaldo, Yonatan Sanz-Perl, Louis-David Lord, Henrique M. Fernandes, Vladimir Litvak, Morten L. Kringelbach, Gustavo Deco,' *Computational and Structural Biotechnology Journal*, Volume 21, Pages 335-345, 2023 doi:10.1016/j.csbj.2022.11.060.

429) 'Temporal Irreversibility of Large-Scale Brain Dynamics in Alzheimer's Disease', Cruzat, Josephine; Herzog, Ruben; Prado, Pavel; Sanz-Perl, Yonatan; Gonzalez-Gomez, Raul;

Moguilner, Sebastian; Kringelbach, Morten L.; Deco, Gustavo; Tagliazucchi, Enzo; Ibanez, Agustin, *Journal Of Neuroscience*, 43, 9, 1643 - 1656. 2023 doi: 10.1523/JNEUROSCI.1312-22.2022

430) 'Human Amygdala compared to Orbitofrontal Cortex Connectivity, and Emotion', Rolls ET, Deco G, Huang CC, Feng J., *Progress in Neurobiology*,102385 2023 doi: 10.1016/j.pneurobio.2022.102385

431) 'The effect of turbulence in brain dynamics information transfer measured with magnetoencephalography', Deco G, Liebana Garcia S, Sanz Perl Y, et al., *Communications Physics*, 6, 1, 74.2023 doi: 10.1038/s42005-023-01192-2

432) 'Inhibitory neurons control the consolidation of neural assemblies via adaptation to selective stimuli', Bergoin, Raphael; Torcini, Alessandro; Deco, Gustavo; Quoy, Mathias; Zamora-Lopez, Gorka, *Scientific Reports*, 13, 1 2023 .doi: 10.1038/s41598-023-34165-0

433) "The arrow of time of brain signals in cognition: Potential intriguing role of parts of the default mode network." Gustavo Deco, Yonatan Sanz Perl, Laura de la Fuente, Jacobo D. Sitt, B. T. Thomas Yeo, Enzo Tagliazucchi, Morten L. Kringelbach; Network Neuroscience 2023; doi: 10.1162/netn_a_00300

434) 'Modulation of limbic resting-state networks by subthalamic nucleus deep brain stimulation', Eraifej J, Cabral J, Fernandes H et al. 2023, *Network Neuroscience*, 7, 2, 478 - 495. doi: 10.1162/netn_a_00297

435) 'One ring to rule them all: The unifying role of prefrontal cortex in steering task-related brain dynamics', Deco G, Sanz Perl Y, Ponce-Alvarez A, et al. 2023, *Progress In Neurobiology*, 227, 102468. doi: 10.1016/j.pneurobio.2023.102468

436) 'Learning how network structure shapes decision-making for bio-inspired computing', Schirner M, Deco G & Ritter P 2023 *Nature Communications*, 14, 1. doi: 10.1038/s41467-023-38626-y

437) 'Disrupted resting-sate brain network dynamics in children born extremely preterm',Padilla N, Escrichs A, Del Agua E, et al. 2023, *Cerebral Cortex*, 33, 13, 8101-8109. doi: 10.1093/cercor/bhad101

438) 'Low-dimensional organization of global brain states of reduced consciousness', Perl YS, Pallavicini C, Piccinini J, et al. 2023, *Cell Reports*, 42, 5, 112491. doi:10.1016/j.celrep.2023.112491

439) 'Model-based whole-brain perturbational landscape of neurodegenerative diseases', Sanz Perl Y, Fittipaldi S, Gonzalez Campo C, et al. 2023, *Elife*, 12, e83970. doi: /10.7554/eLife.83970

440) 'Using The Virtual Brain to study the relationship between structural and functional connectivity in patients with multiple sclerosis: a multicenter study', Martí-Juan G, Sastre-Garriga J, Martinez-Heras E, et al. 2023, *Cerebral Cortex*, 33, 12, 7322-7334. Doi /10.1093/cercor/bhad041

442) 'Multi-modal and multi-model interrogation of large-scale functional brain networks', Castaldo F, Páscoa Dos Santos F, Timms RC, et al. 2023, *Neuroimage*, 277, 120236. doi:10.1016/j.neuroimage.2023.120236

443) 'Complex spatiotemporal oscillations emerge from transverse instabilities in large-scale brain networks', Clusella P, Deco G, Kringelbach ML, Ruffini G & Garcia-Ojalvo J 2023, Plos *Computational Biology*, 19, 4, e1010781. doi.org/10.1371/journal.pcbi.1010781

444) 'A physical neural mass model framework for the analysis of oscillatory generators from laminar electrophysiological recordings', Sanchez-Todo R, Bastos AM, Lopez-Sola E, et al. 2023, *Neuroimage*, 270, 119938. doi: 10.1016/j.neuroimage.2023.119938

C) Chapters in Books

1) "Higher Order Statistics with Neural Networks", G. Deco and W. Brauer, in Advances in Neural Information Processing 7, Eds.: G. Tesauro, D. Touretzky and T. Leen, MIT Press, Cambridge, 247-54, 1994.

2) "Neural Learning of Chaotic Time Series", G. Deco, B. Schürmann and R. Trippi, in Chaos and Nonlinear Dynamics in the Financial Markets, Ed.: R. Trippi, Irwin Professional Publishing, 467-488, 1995.

3) "Dual Statistical Mechanical Theory for Unsupervised and Supervised Learning", G. Deco and B. Schürmann, in Maximum Entropy and Bayesian Methods, Kluwer Academic Publishers, Dordrecht, 317, 1996.

4) "Learning Exact Patterns of Quasi-Syncronization among Spiking Neurons from Data on Multi-Unit Recordings", L. Martignon, K. Laskey, G. Deco and E. Vaadia, in Advances in Neural Information Processing 9, Eds.: M. Mozer, M. Jordan and T. Petsche, MIT Press, Cambridge, 76-82, 1997.

5) "Dynamic Modeling of Chaotic Time Series by Neural Networks", G. Deco and B. Schürmann, in Computational Learning Theory and Natural Learning Systems, Vol. IV: Making Learning Systems Practical, Eds.: R. Greiner, T. Petsche and S. Hanson, MIT Press, Cambridge, pp. 137-153, 1997.

6) "Inherent Information Flow in Chaotic Systems", G. Deco and B. Schürmann, in "Self-Organization of Complex Structures: From Individuals to Collective Dynamics", Eds.: F. Schweizer and H. Haken, Gordon and Breach Science Publishers, United Kingdom, 51-57, 1997.

7) "Neural Network Based Testing of Nonlinear Markovian Hypotheses in Dynamical Systems", G. Deco and C. Schittenkopf, in "Foundations of Computer Science: Potential-Theory-Cognition", Lecture Notes in Computer Science, **1337**, 481-488, 1997.

8) "Correlator: A Program for Detecting Neural Assemblies", L. Martignon, A. Schwarz, M. Skubacz and G. Deco, in Forschung und wissenschaftliches Rechnen, Eds.: T. Plesser and P. Wittenburg, Gesellschaft für wissenschaftliche Datenverarbeitung, Göttingen, 69-79, 1997.

9) "Informationdynamics and Neural Techniques for Data Analysis", G. Deco, in Advances in Control and Dynamic Systems, Neural Network Systems Techniques and Applications, Ed.: Leondes, Academic Press, 305-351, 1998.

10) "Modeling of Nonstationary Financial Time Series by Nonparametric Data Selection" G. Deco, R. Neuneier and B. Schürmann, in Decision Technologies for Financial Engineering, Eds.: A. Weigend, Y. Abu-Mostafa and A. Refenes, World Scientific, Singapore, 307-317, 1997.

11) "Rest EEG Hidden Structure as a Discriminant for Brain Tumor Classification", R. Silipo, G. Deco, and H. Bartsch, in Artificial Neural Networks in Biomedicine, Springer-Verlag, pp. 169-180, 2000.

12) "A Neuronal Model of Binding and Selective Attention for Visual Search", G. Deco and J. Zihl, in Connectionist Models in Cognitive Neuroscience, Eds.: D. Heinke, G. Humphreys, A. Olson, Springer-Verlag, 262-271, 1999.

13) "A Neurodynamical Approach to Visual Attention", G. Deco and J. Zihl, in Advances in Neural Information Processing 12, Eds.: K. Müller, MIT Press, Cambridge, 10-16, 2000.

14) "Biased Competition Mechanisms for Visual Attention", G. Deco, in Emergent Neural Computational Architectures Based on Neuroscience, Eds.: S. Wermter, J. Austin, and D. Willshaw, Springer, Heidelberg, 2001.

15) "A Theoretical Framework for the Cortical Dynamics Underlying Cognitive Brain Function", G. Deco, R. Almeida, M. Loh, M. Szabo, and M. Stetter, Recent Research Developments in Physics, **5**, 995-1031, Transworld Research Network, India, 2004.

16) "The Role of Short Term Memory in Visual Attention", G. Deco, and E. Rolls, in Neurobiology of Attention, Eds.: L. Itti, G. Rees, and J. Tsotsos, Chapter **100**, pp. 610-617, Elsevier, Oxford, 2005.

17) "The Computational Neuroscience of Visual Cognition: Attention, Memory, and Reward", G. Deco, in Attention and Performance in Computational Vision, Eds.: L. Paletta, J. Tsotsos, J. Rome, and G. Humphreys, Lecture Notes in Computer Science, Springer-Verlag, Heidelberg, v. **3368**, p.100, 2005.

18) "Computational Neuroscience for Cognitive Brain Functions", M. Loh, M. Szabo, R. Almeida, M. Stetter, and G. Deco, in Artifitial Intelligence Methods and Tools for Systems Biology, Eds.: W. Dubitzky, and F. Azuaje, Reihe: Computational Biology, **5**, 2004.

19) "A Neurodynamical Model of Visual Attention", G. Deco, E. Rolls, and J. Zihl, in Neurobiology of Attention, Eds.: L. Itti, G. Rees, and J. Tsotsos, Chapter **97**, pp. 593-599, Elsevier, Oxford, 2005.

20) "Computational Neuroscience and Cognitive Brain Functions", G. Deco, and E. Rolls, in Intelligent Computing Everywhere, Eds.: A. Schuster, pp. 153-170, Springer, London, 2007.

21) "Biased Competition and Cooperation: A Mechanism of Mammalian Visual Recognition", G. Deco, M. Stetter, and M. Szabo, in Object Recognition, Attention, and Action, Eds.: N. Osaka, I. Rentschler, and I. Biederman, pp. 187-203, Springer, Japan, 2007.

22) "Decision-Making Mechanisms in the Brain", G. Deco, and E. Rolls, in Cooperative Behavior in Neural Systems (American Institute of Physics Conference Proceedings, 887), Eds.: P. Garrido, J. Marro, and J. Torres, pp. 21-28, AIP, USA, 2007.

23) "The Spiking Search over Time and Space Model (sSoTS): Simulating Dual Task Experiments and the Temporal Dynamics of Preview Search", E. Mavritsaki, D. Heinke, G. Humphreys, and G. Deco, in Lecture Notes in Artificial Intelligence 4840: Attention in Cognitive Systems, Eds.: L. Paletta, and E. Rome, pp. 343-356, Springer, Germany, 2008.

24) "Neuronal and Cortical Dynamical Mechanisms Underlying Brain Functions", A. Stemme and G. Deco, In Handbook of Cognitive Science: An Embodied Approach. P. Calvo and T. Gomila. Elsevier. Chapter 12, pp. 221-240, 2008.

25) "Neural Mechanisms of Visual Memory: A Neurocomputational Perspective", G. Deco and E. Rolls, In Visual Memory. S. Luck, A. Hollingworth. Oxford University Press.ISBN:978-0-19-530548-7, 2008.

26) "Vision - Computational Approaches", G. Deco and E. Rolls, In Encyclopedia of Neurosciences. M. Binder, N. Hirokawa, and U. Windhorst. Springer Verlag. Vol. 5, pp 4291-4295, 2009.

27) "Stochastic Dynamics in the Brain and Probabilistic Decision-making", G. Deco and E. Rolls, In Creating Brain-Like Intelligence: From Basic Principles to Complex Intelligent Systems. Bernhard Sendhoff, Edgar Koerner, Olaf Sporns, Helge Ritter and Kenji Doya. Springer Verlag, pp. 31-50, 2009.

28) "Stochastic Neurodynamical Computation of Brain Functions", G. Deco and E. Rolls, In Computational Modelling in Behavioural Neuroscience: Closing the Gap Between Neurophysiology and Behaviour. D. Heinke and E. Mavritsaki. Psychology Press, 2009.

29) "Stochastic Neural Dynamics as a Principle of Perception", G. Deco and R. Romo, In Coherent Behavior in Neuronal Networks (Springer Series in Computational Neuroscience). K. Josic, J. Rubin, M. Matias and R. Romo. Springer Verlag.pp 247-262, 2010.

30) " Cortical Dynamics Related to Mental Illnesses", M. Loh, E. Rolls, and G. Deco G., In Systems Biology in Psychiatric Research: From High-Throughput Data to Mathematical Modeling. Tretter, Felix / Gebicke-Haerter, Peter J. / Mendoza, Eduardo R. / Winterer, Georg. Wiley-VCH.pp. 321-340, 2010.

31) "The Dynamical and Structural Basis of Brain Activity", G. Deco, V. Jirsa , and K. Friston, In Principles of Brain Dynamics (MIT Press, Cambridge, Mass. USA). Edited by M. Rabinovich, K. Friston, and P. Varona, 2012.

32) "Brain Dynamics at Rest: How Structure Shapes Dynamics", E. Hugues, J. Vidal, JP Lachaux, and G. Deco, In Multiscale Analysis and Nonlinear Dynamics (CRC Press, Taylor and Francis Group). Edited by Misha (Meyer) Z. Pesenson, 2013.

33) "Brain Learning and Coding in Neural Networks", T. Masquelier, and G. Deco, In Principles of Neural Coding (Wiley-VCH, Reviews of Nonlinear Dynamics and Complexity). Edited Rodrigo Quian Quiroga and Stefano Panzeri, 2013.

34) "Models of Spontaneous Activity", J. Cabral and G. Deco, Encyclopedia of Computational Neuroscience. Eds.: Jaeger, D. and Jung, R., Springer New York, pp 2854-2858, 2015.

35) "Computational Models of Dysconnectivity in Large-Scale Resting-State Networks", M. Dermitas and G. Deco. Anticevic A, Murray JD, eds., Computational Psychiatry: Mathematical Modeling of Mental Illness. San Diego: Academic Press, 2018

36) "Whole-brain modeling to predict optimal deep brain stimulation targeting." Fernandes, H., Deco, G., and Kringelbach, M. In: Horn A (Ed). Connectomic Deep Brain Stimulation. San Diego: Academic Press / Elsevier Inc., 2022, pp. 543-560.