HBP International Conference

Understanding Consciousness

A scientific quest for the 21st century

21 - 22 June 2018 | BARCELONA

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Human Brain Project

Co-funded by
the European Union

PROGRAMME

Thursday, June 21

09.00-09.20 Introduction and overview
Chair: *Johan F. Storm (University of Oslo, Norway):*
Consciousness research and the Human Brain Project

09.20-13.00 Fundamental aspects, including theories of consciousness

Moderators: *Johan F. Storm (University of Oslo, Norway) & Kathinka Evers (Uppsala University, Sweden)*

09.20 Consciousness as an intrinsic characteristic of the brain
Kathinka Evers (Uppsala University, Sweden)

09.50 Consciousness and the joint in nature between cognition and perception
Ned Block (New York University, USA)

10.20 The meta-problem of consciousness
David Chalmers (New York University, USA)

10.50 Coffee break & Poster Session 1

11.10 Integrated information theory: from phenomenology to its physical substrate
Larissa Albantakis (University of Wisconsin-Madison, USA)

11.40 The global neuronal workspace: past, present and future.
Jean-Pierre Changeux (Institut Pasteur & Collège de France, France)

12.10-13.00 Discussion

13.00-14.00 Lunch & Poster Session 1

14.00-14.40 Integrated consciousness research in HBP
Marcello Massimini (University of Milan, Italy)

14.40-15.00 Discussion

15.00-18.00 Neurobiological mechanisms and correlates of consciousness

Moderators: *Marcello Massimini (University of Milan, Italy) & Mavi Sánchez-Vives (ICREA-IDIBAPS, Spain)*

15.00 The fabric of consciousness in animals: theory and experiment
Cyriel Pennartz (University of Amsterdam, The Netherlands)

15.30 Visceral inputs, brain dynamics and subjectivity
Catherine Tallon-Baudry (Ecole Normale Supérieure, France)

16.00 Consciousness beyond the individual brain
Wolf Singer (Max Planck Institute for Brain Research and Ernst Strüngmann Institute for Neuroscience Frankfurt am Main, Germany)

16.30 Coffee break & Poster Session 2

17.00 Towards empirical testing of theories of consciousness
Nao Tsuchiya (Monash University, Australia)

17.30 Comparative aspects of the neuronal basis for consciousness from insects to humans
Rodolfo Llinas (New York University School of Medicine, USA)

18.00-18.50 Discussion

18.50-19.50 Flash talks
Chair: *Mavi Sánchez-Vives (ICREA-IDIBAPS, Spain)*

The false problem of consciousness: empirically expedient but metaphysically flawed research — should we care?
Alex Gomez-Marin (Instituto de Neurociencias CSIC-UMH, Spain)

The emergence of consciousness
Nelly Padilla (Karolinska Institutet, Sweden)

Deep learning and consciousness
Matthew Crosby (Imperial College London and Centre for the Future of Intelligence, UK)

Loss of consciousness is related to hyper-correlated gamma-band activity in anesthetized macaques and sleeping humans
Michał Bola (Nencki Institute of Experimental Biology, Poland)

Cardio-audio synchronization induces neural surprise response in comatose patients
Marzia De Lucia (Lausanne University Hospital and University of Lausanne, Switzerland)

Bistability and complexity within the sleeping brain: simultaneous intracranial EEG and high-density scalp EEG recording
Andrea Pigorini (University of Milan, Italy)

The minimally conscious state plus and minus: clinical features and functional recovery
Aurore Thibaut (University of Liège, Belgium)

Assessing multiple resting state networks in 1.5 T functional mri in patients with acute brain injury
Jorge Rudas (Universidad Nacional de Colombia, Colombia)

Are changes in time-varying network dynamics truly the result of consciousness or rather due to a general recovery of responsiveness?
Julia Sophia Crone (University of California, USA)

PCI & auditory ERPS for the quantification of the level of consciousness: an EEG-based methods comparison study applied to disorders of consciousness.
Federico Raimondo (University of Liège, Belgium)

Friday, June 22

09.00-12.30 Models, simulations, and emulation of consciousness

Moderators: *Cyriel Pennartz (University of Amsterdam, The Netherlands) & Alain Destexhe (European Institute of Theoretical Neuroscience, France)*

09.00 Why do asynchronous brain states correspond to aroused states?
Alain Destexhe (European Institute of Theoretical Neuroscience, France)

09.25 The threshold for conscious report: signal loss and response bias in visual and frontal cortex
Pieter R. Roelfsema (Netherland Institute for Neuroscience, The Netherlands)

09.50 I am therefore I think
Karl Friston (University College London, UK)

10.20 Coffee break & Poster Session 2

10.40 The multiscale brain: from genes to brain states and behavior
Sean Hill (Krembil Centre for Neuroinformatics, CAMH, Canada)

11.10 Physiological modeling of consciousness: from microcircuits to awareness and wakefulness
Fabrice Wendling (INSERM, France)

11.40-12.30 Discussion

12.30-13.00 Flash talks
Chair: *Cyriel Pennartz (University of Amsterdam, The Netherlands)*

Auditory steady-state responses as an index of disruption of thalamocortical processing in disorders of consciousness
Marek Binder (Jagiellonian University, Poland)

Modeling brain activity during conscious access from the spontaneous state emerging on the brain network
Etienne Hugues (Grenoble Institut des Neurosciences, France)

Monitoring the auditory textures processing in human cortex to distinguish states of consciousness
Urszula Górska (Radboud University Nijmegen, The Netherlands)

Consciousness study in the electrical brain: luminous, an intermediate progress report
Aureli Soria-Frisch (Starlab Barcelona, Spain)

13.00-14.00 Lunch & Poster Session 3
+ Robotics demonstration
by Daniel Camilleri from Sheffield University

14.00-17.40 Clinical, ethical, and societal implications of consciousness research
Moderators: *Steven Laureys (University of Liège, Belgium) & Olivia Gosseries (University of Liège, Belgium)*

14.00 What coma and related states tell us about consciousness
Olivia Gosseries (University of Liège, Belgium)

14.30 Cognitive motor dissociation after severe brain injury
Nicholas Schiff (Cornell University, USA)

15.00 Anesthetic mechanisms of altered states of arousal
Emery Brown (Massachusetts Institute of Technology and Massachusetts General Hospital, USA)

15.30 Coffee break + exhibit/demo

15.50 Thalamic contributions to visual perception and action decisions
Melanie Wilke (University Medicine Goettingen, Germany)

16.20 Neural mechanisms of bodily self-consciousness
Olaf Blanke (Swiss Federal Institute of Technology (EPFL), Switzerland)

16.50-17.50 Discussion

17.50–18.40 Roundtable discussion
Chair: *Cyriel Pennartz (University of Amsterdam, The Netherlands)*
Participants: *Larissa Albantakis, Karl Friston, David Chalmers, Melanie Wilke, Steven Laureys, Jean-Pierre Changeux, Marcello Massimini*

19.15–20.15 Public lecture – "Understanding consciousness: lessons from coma and related states."
Steven Laureys (University of Liège, Belgium)

Introduction by *Johan F. Storm (University of Oslo, Norway):*
"Consciousness: an ancient mystery being explored by modern neuroscience".

POSTER SESSION 1 - Presentation:
Thursday, June 21 – 10:50-11.10
Thursday, June 21 – 13:00-14.00

01 IMAGERY OVERLAPS WITH SPECIFIC STAGES DURING PERCEPTION.
Nadine Dijkstra, Pim Mostert, Floris de Lange, Sander Bosch, Marcel van Gerven
Radboud University, Donders Institute For Brain, Cognition And Behaviour, Nijmegen, The Netherlands

02 THE FALSE PROBLEM OF CONSCIOUSNESS: EMPIRICALLY EXPEDIENT BUT METAPHYSICALLY FLAWED RESEARCH — SHOULD WE CARE?
Alex Gomez-Marin
Instituto De Neurociencias CSIC-UMH

03 THE EMERGENCE OF CONSCIOUSNESS
Nelly Padilla[1], Antonio Donaire[2], Ulrika Aden[1,3], Hugo Lagercrantz[1]
[1] *Dept of Women's and Children's Health, Karolinska Institutet, Stockholm, Sweden*
[2] *Institute of Neuroscience, Clinic Hospital, Barcelona, Spain*
[2] *Dept of Women's and Children's Health, Division of Neonatology, Stockholm, Sweden*

04 CONSCIOUSNESS AS MATTER.A FRESH LOOK ON THE OLD QUESTION.
Elena Martynova
Independent Researcher

05 THE UNFOLDING ARGUMENT: WHY RECURRENT PROCESSING CANNOT EXPLAIN CONSCIOUSNESS
Adrien Doerig[1], Aaron Schurger[2], Michael Herzog[1]
[1] *Laboratory of Psychophysics, Brain Mind Institute, EPFL, Switzerland*
[2] *Cognitive Neuroimaging Unit, NeuroSpin Research Center,Paris, France*

06 CALCULATING CONSCIOUS CAPACITY: APPROXIMATIONS, ANALOGUES, AND CORRELATES OF PHI
Andre Sevenius Nilsen[1], Bjørn Erik Juel[1], William Marshall[2], Johan Fredrik Storm[1]
[1]*Department of Physiology, Institute of Basic Medical Science, University of Oslo, Norway*
[2]*Department of Psychiatry, Center for Sleep and Consciousness, University of Wisconsin, Madison, WI, USA*

07 STRATEGIES FOR TARGETING BRAIN NETWORKS IN CONSCIOUSNESS USING TCS
Marta Castellano[1], Aurore Thibaut[2], Ricardo Salvador[5], Steven Laureys[2], Ujwal Chaudhary[3,4], Niels Birbaumer[3,4], Emiliano Santarnecchi[6], Aureli Soria-Frisch[1] Giulio Ruffini[1,5]
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[2]*Coma Science Group, GIGA-Consciousness, University of Liege, Belgium*
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[5]*Neuroelectrics, Av. Tibidabo 47 bis, 08035 Barcelona, Spain*
[6]*Berenson-Allen Center for Non-Invasive Brain Stimulation, Beth Israel Medical Center, Harvard Medical School, Boston, MA, USA*

08 DEEP LEARNING AND CONSCIOUSNESS
Matthew Crosby[1, 2]
[1]*Imperial College London*
[2]*Centre for the Future of Intelligence, Cambridge*

0.09 MIND AND CONSCIOUSNESS: THE HUMAN CONTROL SYSTEM
Stanislas Bigirimana
Africa University

10 COGNITOME: NEURAL HYPERNETWORKS AS AN ORGANISING PRINCIPLE FOR THE HIGHER BRAIN FUNCTIONS
Konstantin Anokhin[1,2,3]
[1]*National Research Center "Kurchatov Institute", Moscow, Russia*
[2]*Lomonosov Moscow State University, Moscow, Russia*
[3]*P.K.Anokhin Institute of Normal Physiology, Moscow, Russia*

11 QUANTUM COGNITION DERIVED FROM INCOMPLETE GLUING
Yukio Gunj
Waseda University

12 THE LUMINOUS PROJECT AND THE ROLE OF INFORMATION THEORY IN CONSCIOUSNESS RESEARCH
Giulio Ruffini, Aureli Soria-Frisch, Eleni Kroupi, Marta Castellano, David Ibañez, Asif Jamil, Michael A. Nitsche, Min-Fang Kuo Ujwal Chaudhary Niels Birbaumer
Neuroelectrics

13 INFERRING THE DEGREE OF CAUSAL INTERACTIONS WITHIN PHYSICAL SYSTEMS FROM THEIR SURFACE DYNAMICS
Anna Cattani[1], Larissa Albantakis[2], Leonardo Barbosa[2], William Marshall[2], Giulio Tononi[2], Marcello Massimini[1]
[1]*Department of Biomedical and Clinical Sciences "L.Sacco", Università degli Studi di Milano, Milan, Italy*
[2]Department of Psychiatry, Center for Sleep and Consciousness, University of Wisconsin, Madison, WI, USA

14 BLINKING COLOURS: ON GRADUALNESS OF PERCEPTION DURING THE ATTENTIONAL BLINK
Anna Anzulewicz, Michał Wierzchoń
Jagiellonian University In Kraków

15 HOW DOES SENSORY SALIENCY INFLUENCE NEURAL MARKERS OF EXPECTATION VIOLATION? AN ERP ODDBALL PARADIGM
Maria Niedernhuber[1], Federico Raimondo[2], Micah Allen[1], Francesca Fardo[3], Srivas Chennu[4], Jaco Sitt[5], Tristan Bekinschtein[1],
University of Cambridge, Cambridge, UK
University of Buenos Aires, Argentina
Institute of Cognitive Neuroscience, London, UK
University of Kent, Kent, UK
INSERM, Paris, France

16 CONSCIOUSNESS CREATED BY BRAIN WAVES
Tapan Das
Professional Engineers, Ontario

17 A COMPUTATIONAL THEORY FOR CONSCIOUSNESS
Angel Garcia-Baños
Universidad Del Valle

18 CO-EVOLUTION OF CONSCIOUSNESS AND BIASES THAT MAKE HUMANS BEHAVE AGAINST THEIR OWN INTEREST
David Jimenez-Gomez
University Of Alicante

19 SYNAPTIC DENSITY AND COMPLEXITY, AND GLOBAL BROADCASTING OF CONSCIOUS INFORMATION
Jan Karbowski
University Of Warsaw

20 SELF BEYOND THE BODY: MODULATORY EFFECTS OF ENVIRONMENT-SPECIFIC FEEDBACK ON BODY OWNERSHIP AND PERFORMANCE
Klaudia Grechuta[1,2], Laura Ulysse [3], Belén Rubio Ballester[1,2,4], Paul Verschure
[1]*Department of Information and Communication Technologies, Universitat Pompeu Fabra (UPF), 08-018 Barcelona Spain*
[2]*Institute for Bioengineering of Catalonia (IBEC), The Barcelona Institute of Science and Technology (BIST), 08-028 Barcelona Spain*
[3]*Pompeu Fabra University, Center for Brain and Cognition, Computational Neuroscience Group, Department of Information and* [4]*Communication Technologies, 08-018 Barcelona Spain*
[5]*Catalan Institution for Research and Advanced Studies (ICREA),Barcelona Spain*

21 TOWARDS A CONCEPTUAL SPACE OF TRUST IN THE SOCIAL NEUROSCIENCE OF CONSCIOUSNESS
Svenja Pieritz[1], [2], Lucas Lorenzo Pena[1], [2], Xerxes D Arsiwalla[1, 2, 3], Paul F.M.J. Verschure[2, 3, 4]
[1]*IBEC*
[2]*UPF*
[3]*BIST*
[4]*ICREA*

22 WHY DOES THE BRAIN-MIND (CONSCIOUSNESS) PROBLEM SEEM SO HARD? REFLECTIONS ON OUR MENTAL LIMITATIONS AND DUALISTIC INTUITIONS: NEUROSCEPTICISM / NEUROCOMPLEMENTARITY.
Johan F. Storm
University Of Oslo

23 INTEGRATED INFORMATION, SMALL WORLD NETWORKS AND SIZE EFFECTS
Berkay Demirel[1], Gizem Senel[1], Xerxes Arsiwalla[2], Paul Verschure[2]
[1]*Universitat Pompeu Fabra, Barcelona, Spain*
[2]*Institute for Bioengineering of Catalonia, Barcelona, Spain*

24 DIFFERENTIAL ACTIVATION/DEACTIVATION OF BRAIN CORTEX DURING INDUCTION/EMERGENCE OF ANESTHESIA WITH PROPOFOL IN HEALTHY ADULTS
Pablo Sepulveda, Loreta Bernucci, Edgardo Ramirez, Juan Carlos Letelier
Clinica Alemana Santiago,Facultad de Ciencias Universidad de Chile

25 MULTIMODAL NEUROIMAGING APPROACH TO VARIABILITY OF FUNCTIONAL CONNECTIVITY IN DISORDERS OF CONSCIOUSNESS: A PET/MRI STUDY
Carlo Cavaliere[1], Sivayini Kandeepan[2], Marco Aiello[1], Demetrius Ribeiro de Paula[2], Salvatore Fiorenza[3], Mario Orsini[1], Orsola Masotta[3], Andrea Soddu[2] Anna Estraneo[3]
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[3]*NeurorehabilitationUnit and Research Lab. for Disorder of Consciousness, Maugeri ICS, IRCCS, Telese Terme, Italy*

26 HUMAN CONSCIOUSNESS IS SUPPORTED BY SPECIFIC DYNAMIC COORDINATION PATTERNS
Athena Demertzi[1,2,3], Enzo Tagliazucchi[3,4], Stanislas Dehaene[5,6], Gustavo Deco[7,8], Pablo Barttfeld[9], Federico Raimondo[1,3,10], Charlotte Martial[1], Benjamin Rohaut[2,3], Henning U Voss[14] Nicolas D Schiff[1,5]
[1]*University of Liège, Liège, Belgium*
[2]*INSERM, Paris, France*
[3]*Institut du Cerveau et de la Moelle épinière, Paris, France*
[4]*Instituto de Fisica de Buenos Aires, Buenos Aires, Argentina*
[5]*INSERM, Université Paris-Saclay, France*
[6]*Collège de France, Paris, France*
[7]*Universitat Pompeu Fabra, Barcelona, Spain*
[8]*University of Pompeu Fabra, Barcelona, Spain*
[9]*Conicet, Buenos Aires, Argentina*
[10]*Department of Computer Science, University of Buenos Aires, Argentina*

27 INTRA AND INTER-INDIVIDUAL CONSISTENCY OF THE ELECTROENCEPHALOGRAPHIC CORRELATES OF PERCEPTUAL AWARENESS IN THE BLIND FIELD OF HEMIANOPIC PATIENTS
Javier Sanchez-Lopez[1], Caterina A. Pedersini[1], Silvia Savazzi[1],[2], Carlo A. Marzi[1, 2]
[1]*University of Verona, Verona, Verona, Italy*
[2]*National Institute of Neuroscience, Verona, Verona, Italy*

28 SUBJECTIVE EXPERIENCE MEASURED BY THE AMSTERDAM RESTING STATE QUESTIONNAIRE IS NOT RELATED TO COMPLEXITY OF THE EEG SIGNAL
Michał Bola[1], Paweł Orłowski[1], [2], Martyna Płomecka1, 3, Inga Griskova-Bulanova[4]
[1]*Laboratory of Brain Imaging, Nencki Institute of Experimental Biology of Polish Academy of Sciences, Warsaw, Poland*
[2]*Institute of Philosophy, University of Warsaw, Poland*
[3]*Faculty of Mathematics, Informatics, and Mechanics, University of Warsaw, Poland*
[4]*Institute of Biosciences, Life Sciences Centre, Vilnius University, Vilnius, Lithuania*

29 A HEARTBEAT AWAY FROM CONSCIOUSNESS: HEART RATE VARIABILITY ENTROPY CAN DISCRIMINATE DISORDERS OF CONSCIOUSNESS AND IS CORRELATED WITH RESTING-STATE FMRI BRAIN CONNECTIVITY OF THE CENTRAL AUTONOMIC NETWORK
Francesco Riganello[1], Stephen Larroque[1], Mohamed Ali Bahri[2], Lizette Heine[3], Charlotte Martial[1], Manon Carrière[1], Audrey Vanhaudenhuyse[4], Camille Chatelle[1] Steven Laureys[1] Carol Di Perri[5]
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[2]*GIGA-Cyclotron Research Center In Vivo Imaging, University of Liege, Belgium*
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[4]*Sensation & Perception research Group, GIGA-Consciousness, Uniiversity & Hospital of Liege, Belgium*
[5]*Centre for Clinical Brain Sciences, University of Edinburgh, Edinburgh, UK*

30 LOSS OF CONSCIOUSNESS IS RELATED TO HYPER-CORRELATED GAMMA-BAND ACTIVITY IN ANESTHETIZED MACAQUES AND SLEEPING HUMANS
Micha Bola[1], Adam Barrett[2], Andrea Pigorini[3], Lino Nobili[4], Anil Seth[2], Artur Marchewka[1]
[1]*Nencki Institute Of Experimental Biology*
[2]*Sackler Centre for Consciousness Science, University of Sussex*
[3]*Department of Clinical Sciences, University of Milan*
[4]*Centre of Epilepsy Surgery "C. Munari", Niguarda Hospital, Milan*

31 UNCONSCIOUS DETECTION OF ONE'S OWN FACE
Maria Nowicka, Michal Wójcik, Michal Bola, Anna Nowicka

Nencki Institute Of Experimental Biology Polish Academy Of Sciences

32 DOES CORTICAL HYPEREXCITABILITY PREDISPOSE "HEALTHY" INDIVIDUALS TO ABERRATIONS OF CONSCIOUSNESS?

Rachel Marchant[1], Jason Braithwaite[2]
[1]*Birmingham University, UK*
[2]*Lancaster University, UK*

33 THE EVOLUTION OF CONSCIOUSNESS AS A FUNCTION OF INCREASING NEURAL COMPLEXITY.

Ioannis Reklos, Mary Canellopoulou, Paraskevi Papadopoulou
Deree -The American College of Greece, Gravias 6, Aghia Paraskevi, Greece

34 ROLE OF THE AMYGDALA AND THE HIPPOCAMPUS IN CONSCIOUS PERCEPTION AND EMOTION PROCESSING IN PATIENTS WITH DRUG RESISTANT EPILEPSY

Marcos Quevedo-Diaz[1 2], Ruggero Bettinardi[1], Adrià Tauste Campo[2], Alessandro Principe[2], Thomas Gener[2], Rodrigo Rocamora[2], Mara Dierssen[1 2],
[1]*Centre For Genomic Regulation*
[2]*Institut Hospital del Mar d'Investigacions Mediques*

35 COMPLEXITY ON SPONTANEOUS EEG AS A MARKER FOR TDCS EFFICACY ON DISORDERS OF CONSCIOUSNESS

Eleni Kroupi[1], Aureli Soria-Frisch[1], Geraldine Martens[3], Olivia Gosseries[3], Steven Laureys[3], Aurore Thibaut[3], Giulio Ruffini[1,2],
[1]Starlab Barcelona SL, Barcelona, Spain
[2]Neuroelectrics Corporation 210 Broadway, MA 02139, USA
[3]Coma Science Group, GIGA Research, University of Liège, Liège, Belgium

36 CARDIO-AUDIO SYNCHRONIZATION INDUCES NEURAL SURPRISE RESPONSE IN COMATOSE PATIENTS

Marzia De Lucia[1], Vincent Pidoux[1], Nathalie Ata Ngouepnjo Nguissi[1], Thomas Kustermann[1], Matthias Hanggi[2], Frédéric Zubler[3], Rebekka Kurmannm[3], Christian Pfeiffer[1]
[1]Lausanne University Hospital And University Of Lausanne, Department Of Clinical Neurosciences
[2]Department of Intensive Care Medicine, Inselspital, Bern University Hospital, University of Bern, Switzerland
[3]Department of Neurology, Inselspital, Bern University Hospital, University of Bern, Switzerland

37 SPATIOTEMPORAL DYNAMICS OF ATTENTIONAL CUEING IN HEALTHY PARTICIPANTS AND A HEMIANOPIC PATIENT. A FAST OPTICAL IMAGING STUDY.

Chiara Mazzi[1], Giorgia Parisi[1], Elisabetta Colombari[1], Brian Allen Metzger[2], Carlo Alberto Marzi[1], [3], Silvia Savazzi[1], [3]
[1]University Of Verona
[2]Baylor College of Medicine
[3]National Institute of Neuroscience

POSTER SESSION 2 - Presentation: Thursday, June 21 – 16:30-17.00 Friday, June 22 – 10:20-10.40

01 ACTIVATION OF AREA HMT FOLLOWING STIMULUS PRESENTATION TO THE BLIND FIELD OF HEMIANOPIC PATIENTS: CAN IT PREDICT THE LEVEL OF PERCEPTUAL AWARENESS AND BEHAVIORAL PERFORMANCE?

Caterina Annalaura Pedersini[1], Angelika Lingnau[2,3], Nicolò Cardobi[1], Javier Sanchez Lopez[1], Silvia Savazzi[1,4,5], Carlo Alberto Marzi[1,5]
[1]Department of Neuroscience, Biomedicine and Movement Sciences, University of Verona, Italy
[2]Department of Psychology, Royal Holloway University of London, UK
[3]Centre of Mind/Brain Sciences, University of Trento, Italy
[4]Perception and Awareness (PandA) Lab, Italy
[5]National Institute of Neuroscience, Verona, Italy

02 INDIVIDUAL ALPHA FREQUENCY AS A PROXY FOR BINOCULAR RIVALRY DYNAMICS

Alba Sabaté[1], Mireia Torralba[1], Márta Szabina Pápai[1], Alice Drew[1], Salvador Soto-Faraco[1,2]
[1]Center For Brain And Cognition, Universitat Pompeu Fabra
[2]ICREA

03 INFORMATIVENESS OF AUDITORY STIMULI DOES NOT AFFECT EEG SIGNAL DIVERSITY

Pawe Or owski[1], Karolina Baranowska[1], Micha Bola[1], Artur Marchewka[1], Michael Schartner[2]
[1]Nencki Institute Of Experimental Biology Of Polish Academy Of Sciences
[2]Université de Genève

04 BISTABILITY AND COMPLEXITY WITHIN THE SLEEPING BRAIN: SIMULTANEOUS INTRACRANIAL EEG AND HIGH-DENSITY SCALP EEG RECORDING

Andrea Pigorini[1], Simone Sarasso[1], Sara Parmigiani[1,2], Anna Cattani[1], Matteo Fecchio[1], Chiara Campana[1], Annalisa Rubino[1], Giorgio Lo Russo[3] Lino Nobili[3] Marcello Massimini[1]
[1]*University Of Milan, Milan, Italy*
[2]*Dipartimento di Fisiopatologia Medico-Chirurgica e dei Trapianti, Milan,Italy*
[3]*Centre of Epilepsy Surgery "C.Munari", Department of Neuroscience, Niguarda Hospital, Milan, Italy*

05 EVALUATION OF COMPLEXITY METRICS IN FMEG

Julia Moser[1], Siouar Bensaid[2], Eleni Kroupi[3], Franziska Schleger[1], Fabrice Wendling[2], Giulio Ruffini[3], Hubert Preißl[1]
[1]*Helmholtz Center Munich at the University of Tübingen, Tübingen, Germany*
[2]*University of Rennes 1, Rennes, France*
[3]*Starlab, Barcelona, Spain*

06 BEHIND AN EYE BLINK: A NEW EMPIRICAL PERSPECTIVE ON INTENTIONAL ACTION

Chiara-Camilla Derchi[1], Alice Mazza[1], Silvia Casarotto[1], Angela Comanducci[1], Matteo Fecchio[1], Guya De Valle[2], Davide Trimarchi[2], Marcello Massimini[1] Corrado Sinigaglia[1]
[1]*University of Milan*
[2]*Fondazione Don Carlo Gnocchi*

07 COMMAND FOLLOWING ASSESSMENT AND PREDICTION OF RECOVERY IN UNRESPONSIVE WAKEFULNESS SYNDROME PATIENTS WITH A VIBROTACTILE P300-BASED BRAIN-COMPUTER INTERFACE

Rossella Spataro[1], Alexander Heilinger[2], Brendan Allison[3], Christoph Guger[2], Vincenzo La Bella[1]
[1]*ALS Clinical Research Center. Department of Experimental Biomedicine and Clinical Neurosciences, University of Palermo, Palermo, Italy;*
[2]*g.tec Guger Technologies OG, Graz, Austria*
Cognitive Science Department, University of California at San Diego, La Jolla, CA, USA.

08 PAST INDIVIDUAL EXPERIENCE SHAPES CELLULAR RESTING-STATE NETWORK ACTIVITY OF THE MOUSE BRAIN

Ksenia Toropova[1, 2], Dmitry Sukhinin[2], Elena Konovalova[3], Anastasia Natrova[1], Anna Ivanova[1, 3], Dmitry Ivashkin[1], Olga Ivashkina[1, 2], Aleksey Ivanitsky[4] Konstantin Anokhin[1, 2, 3]
[1]*NRC "Kurchatov Institute", Moscow, Russia*
[2]*Lomonosov Moscow State University, Moscow, Russia*

[3]*P.K. Anokhin Institute of Normal Physiology, Moscow, Russia*
[4]*Institute of Higher Nervous Activity and Neurophysiology of RAS, Moscow, Russia*

09 WHAT MOUSE BRAIN DYNAMICS CAN TELL US ABOUT HUMAN CONSCIOUSNESS
Mark Reimers[1]
Michigan State University

10 SLEEP-LIKE BISTABILITY, LOSS OF CAUSALITY AND COMPLEXITY IN THE CEREBRAL CORTEX OF PATIENTS WITH UNRESPONSIVE WAKEFULNESS SYNDROME
Matteo Fecchio[1], Mario Rosanova[1,2], Silvia Casarotto[1], Simone Sarasso[1], Adenauer Casali[3], Andrea Pigorini[1], Angela Comanducci[1], Olivia Gosseries[4] Steven Laureys[4] Marcello Massimini[1,5]
[1]*Department Of Biomedical And Clinical Sciences "L. Sacco", University Of Milan*
[2]*Fondazione Europea per la Ricerca Biomedica Onlus, Milan, Italy*
[3]*Instituto de Ciência e Tecnologia, Universidade Federal de São Paulo, Sao Jose dos Campos, Brazil*
[4]*GIGA-consciousness, Coma Science Group, University and University Hospital of Liège, Liège, Belgium*
[5]*IRCCS Fondazione Don Gnocchi Onlus, Milan, Italy*

11 ESTIMATING THE INTEGRATED INFORMATION MEASURE PHI FROM HIGH-DENSITY ELECTROENCEPHALOGRAPHY DURING STATES OF CONSCIOUSNESS IN HUMANS
Hyoungkyu Kim[1,2], Anthony Hudetz[1,2,3], Joseph Lee[1,2], George Mashour[1,2], UnCheol Lee[1,2,3]
[1]*Department of Anesthesiology, University of Michigan Medical School, Ann Arbor, MI, United States*
[2]*Center for Consciousness Science, University of Michigan Medical School, Ann Arbor, MI, United States*
[3]*Neuroscience Graduate Program, University of Michigan, Ann Arbor, MI, United States*

12 ARE CHANGES IN TIME-VARYING NETWORK DYNAMICS TRULY THE RESULT OF CONSCIOUSNESS OR RATHER DUE TO A GENERAL RECOVERY OF RESPONSIVENESS?
Julia Sophia Crone, Evan Lutkenhoff, Paul Vespa, Martin Monti
University Of California, Los Angeles, California, USA

13 A NEW APPROACH FOR ASSESSING PERTURBATIONAL COMPLEXITY IN RATS
Alessandro Arena[1], Renzo Comolatti[2], Adenauer G. Casali[2], Johan F. Storm[1]
University Of Oslo, Oslo, Norway
Federal University of São Paulo, São Paulo, Brazil

14 NOCICEPTION AND CLASSIC CONDITIONAL LEARNING IN UNRESPONSIVE WAKEFULNESS SYNDROME
Francesco Riganello, Maria Daniela Cortese, Lucia Francesca Lucca, Paolo Tonin, Francesco Arcuri
S. Anna Institute

15 HEART RATE VARIABILITY AS AN INDICATOR OF NOCICEPTIVE PAIN IN DISORDERS OF CONSCIOUSNESS?
Francesco Riganello[1,2], Camille Chatelle[1,3], Caroline Schnakers[4,5], Steven Laureys[1]
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16 NEURONAL CORRELATES OF METACOGNITION IN HUMAN SUPPLEMENTARY EYE FIELD
Cilia Jäger[1,2,3], Sarah Glim[1,2,3], Cristiana Dimulescu[1,2], Anja Ries[1,2], Christian Sorg[1,2], Afra Wohlschläger[1,2,3]
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17 IS P3B A CORRELATE OF CONSCIOUSNESS? EVENT-RELATED POTENTIALS TO CONSCIOUSLY AND UNCONSCIOUSLY PRESENTED SELF-RELATED STIMULI
Lucja Doradzińska[1, 2], Micha³ Wójcik[3], Ilona Kotlewska[3], Pawe³ Tacikowski[4], Anna Nowicka[3], Micha³ Bola[1]
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18 MULTIFOCAL TDCS TARGETING OF SLEEP PROMOTING NETWORK WITH POTENTIAL APPLICATIONS IN DISORDERS OF CONSCIOUSNESS
Ricardo Salvador[1], Emiliano Santarnecchi[2,3], Aureli Soria-Frisch[4], Marta Castellano[4], Giulio Ruffini[1,4]
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19 DISENTANGLING NEURAL CORRELATES OF CONSCIOUSNESS THROUGH LEVEL OF PROCESSING MANIPULATION
Marcin Koculak, Monika Derda, Marek Binder, Micha Wierzcho
C-Lab, Institute Of Psychology, Jagiellonian University

20 LOOK HERE! VISUAL COGNITION INVESTIGATED WITH LAPFC TMS
Justyna Hobot[1,3], Borysław Paulewicz[2], Michał Wierzchoń[1], Kristian Sandberg[3]
[1]*Jagiellonian University*
[2]*University of Social Sciences and Humanities*
[3]*Aarhus University Hospital*

21 AGENCY AND RESPONSIBILITY OVER BODY MOVEMENTS INDUCED THROUGH BRAIN-COMPUTER INTERFACES
Birgit Nierula[1,2], Bernhard Spanlang[2], Matteo Martini[1,2], Mireia Borrell[2], Vadim V. Nikulin[3,4], Maria V. Sanchez-Vives[1,2,5,6]
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22 NEURAL CORRELATES OF COGNITIVE CONFLICT DURING BINOCULAR RIVALRY

Alice Albertini Drew[1], Salvador Soto-Faraco[1, 2], Mireia Torralba[1], Márta Szabina Pápai[1], Manuela Ruzzoli[1], Luis Morís Fernández[1], Alba Sabaté[1],
[1]Universitat Pompeu Fabra
[2]ICREA

23 AUDITORY STEADY-STATE RESPONSES AS AN INDEX OF DISRUPTION OF THALAMOCORTICAL PROCESSING IN DISORDERS OF CONSCIOUSNESS

Marek Binder[1], Urszula Górska[1,3], Inga Griskova-Bulanova[2]
[1]Jagiellonian University, Kraków, Poland
[2]Vilnius University, Vilnius, Lithuania
[3]Radboud University, Nijmegen, The Netherlands

0.24 MEASURES OF CONNECTIVITY, COMPLEXITY AND SIGNAL DIVERSITY IN EEG DISTINGUISH CONSCIOUS FROM UNCONSCIOUS STATE DURING ANESTHESIA

Bjørn Juel[1], Andre Sevenius Nilsen[1], Olivia Gosseries[2], Simone Sarasso[3], Pål Gunnar Larsson[4], Melanie Boly[5], Steven Laureys[2], Marcello Massimini[3] Johan Fredrik Storm[1]
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25 LEFT AMYGDALA RESTING STATE NETWORK IN CONSCIOUS PROCESSING OF FEAR MEMORIES

Olga Martynova[1,4], Vladislav Balaev[1], Galina Portnova[1], Sergey Kartashov[2], Ksenia Toropova[2,3], Victoria Moiseeva[4], Alexey Ivanitsky[1],
[1]Institute Of Higher Nervous Activity And Neurophysiology RAS
2National Research Center Kurchatov Institute
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26 TOPOGRAPHICAL BRAIN DYNAMICS PREDICT CONNECTIVITY AND BEHAVIOURAL RESPONSIVENESS DURING SLEEP ONSET

Iulia Comsa[1], Tristan Bekinschtein[1], Srivas Chennu[2,1,3]
[1]University of Cambridge
[2]University Of Kent
[3]Alan Turing Institute

27 THE BINDING SEGMENTATION OF TASK SPECIFIC EVENTS IN THE PHASE-AMPLITUDE COUPLING OF THE HUMAN MTL: A MULTI-SCALE TEMPORAL POPULATION CODE

Diogo Santos-Pata[1], Riccardo Zucca[1], Cesar Renno-Costa[2], Giovanni Maffei[1], Alessandro Principe[3], Rodrigo Rocamora[3], Paul Verschure[1]
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28 THETA PHASE MEDIATES DELIBERATE ACTION SWITCH IN HUMAN SMAS

Giovanni Maffei[1], Jordi Puigbo[1], Diogo Santos Pata[1], Riccardo Zucca[1], Alessandro Principe[2], Rodrigo Roccamora[2], Gerardo Conesa[2], Paul Verschure[1,3]
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29 MODULATION OF WORKING MEMORY THROUGH POST-STROKE DEPRESSION

Martina Maier[1], Sock Ching Low[1], Belén Rubio Ballester[1], Nuria Leiva Bañuelos[2], Esther Duarte Oller[2], Paul F. M. J. Verschure[1,3]
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30 CORTICAL VISCERAL PERCEPTION DURING DAYTIME AND ITS CORRELATES WITH AUTONOMIC BALANCE AND SLEEP STAGES IN CHILDREN

Alain Riveros-Rivera[1,2], Hanns-Christian Gunga[2], Pilar Guerrero[3], Juan Cote-Orozco[4]
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[4]Universidad Militar Nueva Granada

31 EFFECTS OF INTRACAROTID SODIUM AMOBARBITAL PROCEDURE (ISAP) ON CORTICAL COMPLEXITY

Sebastian Halder[1], Lashmi Venkat Raghavan[2], Bjørn E. Juel[1], Andre S. Nilsen[1], Johan F. Storm
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[2]University of Toronto

32 SUPRAMAMMILLARY NEURONS FIRING RATE CORRELATE WITH HIPPOCAMPAL THETA FREQUENCY DURING PHASIC REM SLEEP

Aron Miranda[1 2], Dian-Ru Wang[1], Claudio Queiroz[2], Pierre-Hervé Luppi[1]
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Brain Institute, Federal University of Rio Grande do Norte, Natal, Brazil

33 FROM NEURAL CORRELATES TO A FUNCTIONAL HIERARCHY OF CONSCIOUSNESS: INTEGRATING THE EASY PROBLEMS

Judit Martínez Moreno, Xerxes Arsiwalla, Paulus Verschure, Universitat Pompeu Fabra, Barcelona, Spain

34 PCIE: A NOVEL DATA ROBUST PERTURBATIONAL COMPLEXITY INDEX

Thierry Nieus[1], Silvia Casarotto[1], Casali Adenauer[2], Marcello Massimini[1]
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35 TMS-EEG EXAMINATION OF THE EFFECT OF TDCS ON DISORDERS OF CONSCIOUSNESS

Armand Mensen, Olivier Bodart, Aurore Thibaut, Sarah Wannez,

Steven Laurey, Olivia Gosseries
University Of Liege

36 PCI & AUDITORY ERPS FOR THE QUANTIFICATION OF THE LEVEL OF CONSCIOUSNESS: AN EEG-BASED METHODS COMPARISON STUDY APPLIED TO DISORDERS OF CONSCIOUSNESS.
Federico Raimondo[1,2,3,4,5], Audrey Wolff[1], Leandro Sanz[1], Silvia Casarotto[6], Matteo Fecchio[6], Mario Rosanova[6], Marcello Massimini[6], Jacobo Sitt[3,4] Steven Laureys[1] Olivia Gosseries[1]
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37 EEG FUNCTIONAL CONNECTIVITY IN MODIFIED SUBJECTIVE STATE OF CONSCIOUSNESS INDUCED BY HYPNOSIS
Rajanikant Panda[1], Olivia Gosseries[1], Audrey Vanhaudenhuyse[2], Athena Demertz[1], Andrea Piarulli[1], Marie-Elisabeth Faymonville[2], Steven Laureys[1]
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38 FRAMEWORK FOR ESTIMATION AND INTERPRETATION OF BIOMARKERS FOR BRAIN DYNAMICS FROM FMRI
Matthieu Gilson
Universitat Pompeu Fabra

POSTER SESSION 3 - Presentation: Friday, June 22 – 13:00-14.00

01 SYNCHRONIZED OSCILLATIONS UNDERLYING FEATURE BINDING IN WORKING MEMORY
Joao Barbosa[1,3], Ainsley Temudo[2], Vahan Babushkin[2], Tim Buschman[3], Kartik Sreenivasan[2], Albert Compte[1],
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02 WHICH NEURAL NETWORKS MATCH HUMAN PERFORMANCE IN ARTIFICIAL GRAMMAR LEARNING?
Andrea Alamia[1], Victor Gauducheau[1,2], Rufin VanRullen[1]
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03 PREDICTING RESPONSIVENESS OF MCS PATIENTS TO FRONTOPARIETAL TDCS: A COMPUTATIONAL MODEL
Maria Chiara Biagi[1], Ricardo Salvador[1], Aurore Thibaut[2], Geraldine Martens[2], Charlotte Martial[2], Steven Laureys[2], Aureli Soria-Frisch[3], Giulio Ruffini[1], [3]
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04 IMPLEMENTATION OF THE HILL-TONONI THALAMOCORTICAL NETWORK MODEL IN THE NEURAL SIMULATOR NEST
Ricardo Murphy[1], Andre Nilsen[1], Bjørn Juel[1], Hans Ekkehard Plesser[2,3], Sean Hill[4], Thierry Nieus[5], Marcello Massimini[5], Johan Storm[1]
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05 CONSCIOUSNESS INDEX AND NODE STRENGTH CONNECTIVITY IN A KURAMOTO MODEL
Daniel Ricardo Izquierdo Peña[1], [2], Francisco de Paula Roca Rodríguez[1], Antonio Ibañez Molina[1], Sergio Iglesias Parro[1], Francisco José Esteban Ruiz[1]
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06 CRITICALITY, SYNCHRONIZATION, AND RESPONSIVENESS IN COMPLEX BRAIN NETWORKS
MinKyung Kim[1,2], Uncheol Lee[1,2], George Mashour[1,2]
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07 AN INFORMATIONAL MODELING OF CONSCIOUSNESS AND COGNITIVE CENTERS
Florin Gaiseanu
Independent Researcher

08 HIGHLY CONNECTED CORTICAL AREAS SUSTAIN THE BIFURCATION DYNAMICS IN GLOBAL BRAIN ACTIVITY
Samy Castro[1], Wael El-Deredy[2,3], Demian Battaglia[4], Patricio Orio[1,5]
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09 A NEURAL ATTRACTOR WORKSPACE FOR VISUAL AWARENESS
David Silverstein
KTH Royal Institute Of Technology

10 MODELING BRAIN ACTIVITY DURING CONSCIOUS ACCESS FROM THE SPONTANEOUS STATE EMERGING ON THE BRAIN NETWORK
Etienne Hugues, Olivier David
Grenoble Institut des Neurosciences

11 CHARACTERIZATION OF BRAIN STATES USING PERTURBATION OF WHOLE-BRAIN DYNAMICS
Ane López-González[1], Jacobo Sitt[2], Athena Demertzi[3], Morten Kringelbach[4], Gustavo Deco[1,5]
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12 EVOLUTION OF INTERNAL SOCIAL REPRESENTATIONS IN AUTONOMOUS AGENTS
Adrián F. Amil[1, 2], Jordi-Ysard Puigbò[1, 2], Xerxes D. Arsiwalla[1, 2],

Ismael T. Freire[1], Martí Sánchez-Fibla[2], Paul F. M. J. Verschure[1, 3, 4]
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13 TOWARDS COMPUTATIONAL PRINCIPLES OF THEORY OF MIND USING COGNITIVE ARCHITECTURES

Ismael T. Freire[1,3], Xerxes D. Arsiwalla[1,2,3], Jordi-Ysard Puigbò[1,3], Paul Verschure[1,3,4]
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14 PREDICTIVE MECHANISMS FOR SEGREGATION AND INTEGRATION OF INFORMATION

Jordi-Ysard Puigbò[1,2], Xerxes Arsiwalla[1,2], Miguel Angel Gonzalez-Ballester[2,3], Paul Verschure[1,3,4]
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15 COMBINATION OF FUNCTIONAL AND STRUCTURAL CONNECTIVITY IN A SINGLE MODEL TO EXPLORE BRAIN NETWORKS IN DISORDERS OF CONSCIOUSNESS

Jean-Michel Pignat[1], Audrey Vanhaudenhuyse[2], Steven Laureys[2], Dimitri Van De Ville[3]
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16 SYNTHESIZING THE EMBODIED SELF : A ROBOTICS PERSPECTIVE

Tony Prescott, Daniel Camilleri
University Of Sheffield

17 THE ETHICAL RELEVANCE OF THE UNCONSCIOUS

Michele Farisco
Uppsala University

18 APERIODIC POWER SPECTRA ANALYSIS IN NEUROMODULATORY DISORDER

Vicente Medel, Joaquín Valdés, Tomás Ossandón
Department of Psychiatry, School of Medicine, Pontificia Universidad Católica De Chile

19 MONITORING THE AUDITORY TEXTURES PROCESSING IN HUMAN CORTEX TO DISTINGUISH STATES OF CONSCIOUSNESS

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20 AUTOMATED MACHINE LEARNING-BASED DIAGNOSIS OF IMPAIRED CONSCIOUSNESS: CROSS-CENTER AND PROTOCOL GENERALIZATION OF EEG BIOMARKERS.

Federico Raimondo[1,2,3,4,9], Denis Engemann[1,5,6], Jean-Remi King[5,7,8], Benjamin Rohaut1,8, Gilles Louppe7, Olivia Gosseries9, Steven Laureys9, Lionel Naccache1,4 Stanislas Dehaene6,10 Jacobo Sitt1,4
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21 THE MINIMALLY CONSCIOUS STATE PLUS AND MINUS: CLINICAL FEATURES AND FUNCTIONAL RECOVERY

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22 RESIGNATION SYNDROME: CATATONIA? CULTURE-BOUND?

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23 OLFACTORY PROCESSING REFLECTS LEVEL OF CONSCIOUSNESS IN DISORDERS OF CONSCIOUSNESS PATIENTS

Anat Arzi[1], Liron Rozenkrantz[2], Yeal Holtzman[2], Danit Rozenkrantz[3], Tatyana Galperin[3], Ben Zion Krimchansky[3], Anna Oksminty[3], Elena Aidinoff[3] Yaron Sacher[3] Noam Sobel [2]
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24 PRELUDE TO EEG-BASED DIAGNOSTIC BATTERY FOR CHILDREN IN DOC

Anna Duszyk, Anna Chabuda, Marian Dovgialo, Marcin Pietrzak, Piotr Ró□a□ski, Magdalena Zieleniewska, Piotr Durka,
Faculty Of Physics, University Of Warsaw

25 PEOPLE REPORTING "NEAR-DEATH-LIKE EXPERIENCES" SHOW A GREATER ENGAGEMENT IN FANTASY

Charlotte Martial[1], Héléna Cassol[1], Vanessa Charland-Verville[1], Harald Merckelbach2, Steven Laureys1
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26 PREVALENCE OF STROKE BETWEEN NEUROLOGICAL DISEASES OF THE AGING WHIT ATTENTION IN PHYSICAL THERAPY SERVICES
German Augusto Baquero Sastre
Manuela Beltran University

27 CAN HYPNOTIZABILITY BE QUICKLY ASSESSED? A COMPARATIVE STUDY OF THE STANFORD HYPNOTIC SUSCEPTIBILITY SCALE AND A NEW THREE-ITEMS SCALE.
Audrey Vanhaudenhuyse[1], Didier Ledoux[2], Olivia Gosseries[3], Athena Demertzi[3], Steven Laureys[3], Marie-Elisabeth Faymonville[1]
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28 ATTENTION AND AWARENESS DISSOCIATED BY BINOCULAR RIVALRY
Manuel Moreno-Sánchez, Jose Antonio Aznar-Casanova, Fernando Valle-Inclán
Universitat de Barcelona

29 THE ROLE OF INFORMATION AND INTEGRATION OF PICTURES IN CONSCIOUS AND UNCONSCIOUS SEMANTIC PERCEPTION
Antonio Ibáñez-Molina, Rafael Martínez-Mesa, Sergio Iglesias-Parro
University of Jaén

30 TRACTOGRAPHY AND RESTING STATE FMRI ANALYSIS IN A PATIENT WITH IMPAIRED CONSCIOUSNESS AFTER A CARDIAC ARREST: A CASE REPORT
Alejandra Parra-Morales[1], Edgar Ordóñez-Rubiano[5], Jorge Rudas[6], Francisco Gomez[4], Darwin Martínez[7,8], José Hernández[9], Jorge Marín-Muñoz[1, 3, 10], Cesar Enciso-Olivera[1,2] Diana Trujillo-Rodríguez[1,2]
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31 CLOSED-LOOP TCS TECHNOLOGY ENABLING TREATMENT OF DISORDERS OF CONSCIOUSNESS
David Ibáñez Soria[1], Aurore Thibaut[2], Georgios Antonopoulos[2], Alice Barra[2], Geraldine Martens[2], Steven Laureys[2], Aureli Soria-Frisch[1], Giulio Ruffini[1,3]
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32 CONSCIOUSNESS STUDY IN THE ELECTRICAL BRAIN: LUMINOUS, AN INTERMEDIATE PROGRESS REPORT
Aureli Soria-Frisch[1], Eleni Kroupi[1], Niels Birbaumer[6], Silvia Casarotto[7], Ujwal Chaudhary[6], Angela Comanducci[7], Olivia Grosseries[2], Asif Jamil[3] Steven Laureys[2] Giulio Ruffini[10]
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33 RECENT ADVANCE IN THE TREATMENT OF PATIENTS IN DISORDERS OF CONSCIOUSNESS: A REVIEW OF TRANSCRANIAL DIRECT CURRENT STIMULATION EFFICACY
Alice Barra, Geraldine Martens, Steven Laureys, Aurore Thibaut
Coma Science Group, University Of Liége, Liége

34 NEUROPHYSIOLOGICAL EFFECTS AND BEHAVIORAL OUTCOMES AFTER TDCS AND TPCS IN PATIENTS WITH DISORDERS OF CONSCIOUSNESS
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35 ASSESSING MULTIPLE RESTING STATE NETWORKS IN 1.5 T FUNCTIONAL MRI IN PATIENTS WITH ACUTE BRAIN INJURY
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GENERAL INFORMATION

Venue

CaixaForum Barcelona
Av. de Francesc Ferrer i Guàrdia, 6-8,
08038 Barcelona
Tel. +34 93 476 86 00

Official Language

The Conference official language is English and all presentations must be done in English.

Registration

The badge is obligatory to access the Conference.
Please, pick it up at the Technical Secretariat on the following timetable:

Thursday, June 21, 2018: 08.30 – 20.00
Friday, June 22, 2018: 08.30 – 20.00

Attendance certificate

It will be sent by email once the Conference finishes.

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