

Héctor Damián Dellavale Clara

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PhD in Engineering Science

May 2026.

Current Research Position

2025 - Present: **Atlantic Fellow for Equity in Brain Health** at the Global Brain Health Institute (GBHI), Trinity College Dublin (TCD), Dublin, Ireland. URL: <https://www.gbhi.org/profiles/damian-dellavale>

2014 - Present: **Independent scientific researcher** at the Argentinian Scientific Council for Science and Technology (CONICET) - Bariloche Atomic Center, Argentina.

URL: https://www.conicet.gov.ar/new_scp/detalle.php?keywords=&id=39010&datos_academicos=yes

Research areas of interest: Machine learning and data analysis for translational research in neuroscience and biomedical applications. Aging. Exposomics. Neurodegenerative diseases. Epilepsy. Autonomic dysfunctions. Imaging biomarkers. Biophysical and sensory neuromodulation. Oscillations and arrhythmic broadband activity. Nested biological rhythms. Analysis of transient fluctuations (anomalies) and large-scale coactivations (avalanches) in brain activity. Inverse problems and source reconstruction methods. Electrical Impedance Spectroscopy (EIS). Electrical Impedance Tomography (EIT). Imaging Photoplethysmography (iPPG). Signal processing in real-time using FPGA technology.

Academic Data

Feb 2021 - Oct 2023: **Postdoctoral fellow**. Institut de Neurosciences des Systèmes (INS), Aix-Marseille Université - Épileptologie et Rythmologie Cérébrale - Hôpital de la Timone, Marseille, France. (<https://ins-amu.fr/dynamap>). Research: New signal processing tools to analyze invasive recordings in epileptic patients. Host: Prof. Fabrice Bartolomei. Prof. Christian Bénar.

July 2013 - Dec. 2013: **Postdoctoral internship**. Institute of Microelectronic Systems - Leibniz University of Hannover, Germany (<http://www.ims.uni-hannover.de>). Research: Real-time processing system for closed-loop Deep Brain Stimulation (DBS). Host: Prof. Dr.-Eng. Holger Blume.

Apr. 2012 - June 2013: **Postdoctoral fellow**. Cavitation and Biotechnology Laboratory - Bariloche Atomic Center, Argentina. Research: Real-time signal processing instrumentation based on FPGA technology for biomedical applications.

Apr. 2006 - Feb. 2012: **Ph.D. in Engineering Science**. Balseiro Institute, National University of Cuyo (<http://www.ib.edu.ar>) and Cavitation and Biotechnology Laboratory - Bariloche Atomic Center, Argentina. Advisor: Dr. Fabián J. Bonetto. Research: Concurrent signal processing algorithms with applications in sonoluminescence. (<http://ricabib.cab.cnea.gov.ar/338/>).

Feb. 2005 - Apr. 2006: **Professional improvement internship (funded by INVAP S.E.)** at the Cavitation and Biotechnology Laboratory - Bariloche Atomic Center, Argentina. Advisor: Dr. Fabián J. Bonetto.

Feb. 2004 - Dec. 2004: **Specialization in Nuclear Energy Technological Applications**. Balseiro Institute - National University of Cuyo & National University of Buenos Aires, Argentina. (www.iaea.org/inis/collection/NCLCollectionStore/_Public/36/058/36058792.pdf)

Feb. 1994 - Oct. 2003: **Electronic Engineering**. National Technological University, Regional Faculty of Córdoba, Argentina.

Mar. 1988 - Dec. 1993: **Aeronautical Technician** (*magna cum laude*). National Technical School N° 7, Córdoba, Argentina.

Honors and Scholarships

2008: **Certificate of recognition** by Argentinian Centre of Engineering for thesis advising (<http://cai.org.ar/>). Awarded Nuclear Engineering thesis: Real-time particle image velocimetry based on FPGA technology, Student: José Miguel Iriarte Muñoz.

2013: **Awarded postdoctoral internship grant** from CONICET, Argentina.

2012: **Awarded full postdoctoral scholarship** from CONICET, Argentina.

2012: **Awarded grant** from The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy (<http://www.ictp.it/>), to attend the Joint ICTP-TWAS Latin-American Advanced Course on FPGA Design for Scientific Instrumentation, Habana, Cuba.

2010: **Awarded grant** from The Abdus Salam International Centre for Theoretical Physics (ICTP), Italy (<http://www.ictp.it/>), to attend the ICTP Latin-American Basic Course on FPGA Design for Scientific Instrumentation, Mar del Plata, Argentina.

2009: **Awarded type II doctoral scholarship** from CONICET, Argentina.

2006: **Awarded type I doctoral scholarship** from CONICET, Argentina.

2005: **Training fellowship grant** from INVAP S.E. (Applied Research Company), Argentina (<http://www.invap.net>).

2004: **Awarded postgraduate scholarship** from Balseiro Institute, National University of Cuyo, Argentina.

Teaching and Academic Activities

Feb. 2016 - Feb. 2021: **Coordinator of the technological physics specialization** in the Academic committee of M.Sc., Balseiro Institute, National University of Cuyo, Argentina.

June 2009 - Feb. 2021: **Educational Researcher Category III** granted by the National Commission of Categorization, Argentinian Ministry of Education (<https://www.argentina.gob.ar/educacion>).

Feb. 2014 - Feb. 2021: **Head of practical assignments** of Signals and Systems I and II chairs (Telecommunications Eng.) at Balseiro Institute, National University of Cuyo, Argentina (<http://www.ib.edu.ar/academicas/ingenieria-en-telecomunicaciones/item/631-plantel-docente-de-ingenieria-en-telecomunicaciones.html>).

July 2008 - Apr. 2013: **Head of practical assignments** of Electronics chair (Degree in Physics, Nuclear and Mechanical Eng.) at Balseiro Institute, National University of Cuyo, Argentina (<http://www.ib.edu.ar>).

Feb. 2008 - July 2008: **Teaching assistant** of Instrumentation and Control chair (Nuclear Eng.) at Balseiro Institute, National University of Cuyo, Argentina (<http://www.ib.edu.ar>).

Aug. 2007: **Teaching assistant** in Control II (Discrete time control systems) chair (Degree in Physics, Nuclear and Mechanical Engineering) at Balseiro Institute, National University of Cuyo, Argentina (<http://www.ib.edu.ar>).

Human Resources Training

Oct. 2025 - Present: **Co-Advisor of Master of Science in Neuroscience**. School of Medicine, Trinity College Dublin, Ireland. Project: Evaluating Neuronal Avalanches in Mobile- and Ear-EEG. Student: Myles Gustav Tollefsen.

Feb. 2025: **Advisor of postgraduate internship**. Balseiro Institute, National University of Cuyo, Argentina. Project: Neuromodulation based on temporally interfering pseudorandom electric fields and pulse sequences. Student: Lucas Mauricio Cabral.

2022 - 2023: **Advisor of Ph.D. internship**. Hôpital de la Timone & Institut de Neurosciences des Systèmes - Aix-Marseille Université, Marseille, France. Project: Analysis of MEG recordings for the study of motor and somatosensory cortical activity associated with phantom upper limb mobility in humans. Student: Manon Chateaux.

Aug. 2020 - Dec 2021: **Advisor of Bachelor of Science in Telecommunications Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Advanced signal processing and machine learning techniques for characterizing electrocardiographic recordings from cardiac risk patients (<https://ricabib.cab.cnea.gov.ar/1114/>). Student: Franco Selleski.

Apr. 2016 - Dec. 2020: **Advisor of Ph.D. in Physics**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Adaptive neuromodulation paradigms with applications to the treatment of motor disorders (<https://ricabib.cab.cnea.gov.ar/964/>). Student: Osvaldo Velarde.

Sept. 2014 - Sept. 2021: **Advisor of Ph.D. in Engineering Science**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Digital signal processing for microwave kinetic Inductance detector (MKID) array (<https://ricabib.cab.cnea.gov.ar/985/>). Student: Luis Horacio Arnaldi.

Aug. 2017 - Aug. 2019: **Co-Advisor of Master's internship of Science in Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Project: Processing of neural recordings and state classification using machine learning algorithms. Student: Facundo Rodriguez.

Feb. 2017 - June 2017: **Advisor of undergraduate internship**. Balseiro Institute, National University of Cuyo, Argentina. Project: Imaging photoplethysmography based on augmented reality. Student: Flavia Gesualdi.

Aug. 2015 - Aug. 2019: **Co-Advisor of Master of Science in Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Characterization and signal conditioning for an inductive position sensor for the control rods of a SMR nuclear reactor (<http://campi.cab.cnea.gov.ar/tocs/24190.pdf>). Student: Iván Nomdedeu.

Aug. 2015 - Aug. 2018: **Advisor of Master of Science in Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Optimization and implementation of signal processing algorithms for neuroprosthetics (<http://campi.cab.cnea.gov.ar/tocs/23745.pdf>). Student: Javier Ignacio Velez.

Aug. 2015 - Dec. 2016: **Advisor of Master of Science in Physics**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Photoplethysmography based on augmented reality with applications in pediatric monitoring (<http://ricabib.cab.cnea.gov.ar/635/>). Student: Carlos Eduardo Valencia Urbina.

Aug. 2014 - June 2015: **Advisor of Bachelor of Science in Mechanical Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Design and implementation of a table-top system for real time electrical impedance tomography (<http://ricabib.cab.cnea.gov.ar/509/>). Student: Ignacio Martín Ferreiro.

Aug. 2014 - Dec. 2015: **Advisor of Master of Science in Physics**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Study of basal ganglia dynamics with applications to motor disorders (<http://ricabib.cab.cnea.gov.ar/520/>). Student: Osvaldo Velarde.

Mar. 2012 - July 2015: **Co-Advisor of Master of Science in Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Signal Processing Algorithms for a SONAR system with multiple transducers. Student: Mariana Mattenet.

July 2009 - Sept. 2010: **Collaborator of Master of Science in Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: 3D object orientation: implementation of artificial neural networks using programmable logic (<http://ricabib.cab.cnea.gov.ar/215/>). Student: Federico Javier Carnevale.

July 2008 - July 2009: **Advisor of Bachelor of Science in Mechanical Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Design and implementation of a laser positioning system with applications in biotechnology (<http://campi.cab.cnea.gov.ar/tocs/21120.pdf>). Student: Federico Javier Carnevale.

July 2007 - July 2008: **Co-Advisor of Bachelor of Science in Nuclear Engineering**. Balseiro Institute, National University of Cuyo, Argentina. Thesis: Real-time particle image velocimetry based on FPGA technology (www.iaea.org/inis/collection/NCLCollectionStore/_Public/41/113/41113340.pdf). Student: José Miguel Iriarte Muñoz.

Science Communication

2024: Science communication talk "Noche de los Museos 2024".

https://damian-dellavale.github.io/talks/inn_22d11d2024_resumen_dellavale.pdf

<https://inn-cnea.conicet.gov.ar/el-inn-en-la-noche-de-los-museos-compartiendo-conocimientos-y-juegos/>

2024: National Science Festival "Elijo crecer".

<https://sites.google.com/view/elijocrecer-brc>

https://github.com/damian-dellavale/Festival_de_Ciencia_Bariloche

2015 - 2019: Organizing committee member of the **Brain Awareness Week** in San Carlos de Bariloche, Argentina. <https://semanadelcerebro.com.ar/>, <https://www.youtube.com/@lasemanadelcerebro4675>

Talk of Dra Silvia Kochen (Epilepsy): <https://youtu.be/xgcB10mdb6l>

Talk of Dr. Oscar Gershanik (Parkinson disease): <https://youtu.be/1RvCWyu3w8A>

<https://www.rionegro.com.ar/bariloche-se-suma-a-la-semana-del-cerebro-AA2435828/>

2006 - 2017: National Week of Science and Technology - Argentinean Ministry of Education.

Refereeing

Journals: Epilepsia (Wiley), Nature Scientific Reports, IEEE Transactions on Neural Systems & Rehabilitation Engineering, IEEE Journal of Translational Engineering in Health & Medicine, Chaos, PLOS ONE, Signal Processing (Elsevier), Biomedical signal processing and control (Elsevier), Clinical Neurophysiology (Elsevier), Frontiers In Computational Neuroscience, Frontiers In Human Neuroscience, Frontiers in Dementia.

Proceedings: Reviewer at the XXV Congreso de la Sociedad Argentina de Bioingeniería (SABI), 2025.

<https://sabi.org.ar/>

Proceedings: Scientific Committee Member of the 1st Conference on scientific instrumentation CRIA 2014, Costa Rica.

Proceedings: FPGA Topic Chair at the 4th Argentinian Conference on Embedded Systems CASE 2014, Buenos Aires, Arg.

Proceedings: Reviewer at the 3rd Argentinian Conference on Embedded Systems CASE 2013, Buenos Aires, Arg.

Theses: Bachelor, Master and PhD theses in Physics and Engineering. Balseiro Institute, National University of Cuyo, Arg.

Projects: Evaluation of scientific research projects for the Argentinian Scientific Council for Science and Technology (CONICET).

Committee: Academic Committee Member for Master of Science in Physics. Balseiro Institute, National University of Cuyo, Arg.

Other Scientific and Academic Activities

2026: Talk on behalf of Agustín Ibáñez at Organization for Human Brain Mapping (OHBM) 2026 Annual Meeting, Bordeaux, France. The brain health synercome and aging clocks.

URL: <https://humanbrainmapping.org/OHBM2026/>

2024: Invited spotlight talk at Brain Criticality 2024. Linking neuronal avalanches with oscillatory and broadband 1/f activities in the resting human brain. URL: <https://braincriticality.org/2024/11/08/spotlight-2024-day2-3-damian-dellavale-linking-neuronal-avalanches-with-oscillatory-and-broadband-1-f-activities-in-the-resting-human-brain/>

2024: Invited speaker at the monthly conference of the Sociedad Argentina de Investigación en Neurociencias. Dinámica ultradiana de anomalías observadas en potenciales de campo local: Aplicación clínica en epilepsia focal refractaria. URL: <https://youtu.be/QZUxngUis18>

2023: Invited seminar at the Instituto de Física Enrique Gaviola (IFEG) - Facultad de Matemática, Astronomía, Física y Computación (FAMAF), Universidad Nacional de Córdoba.. Estudio de la dinámica espacio-temporal de anomalías observadas en registros cerebrales con aplicaciones clínicas en epilepsia y la enfermedad de Parkinson. URL: <https://www.famaf.unc.edu.ar/investigaci%C3%B3n/%C3%A1reas-de-investigaci%C3%B3n/f%C3%ADsica-ofi/seminarios-de-f%C3%ADsica-2023/>

2022: MindBrainBody Lectures, Max Planck Institute for Human Cognitive and Brain Sciences.

Cross frequency couplings in brain recordings and at the organism level using imaging photoplethysmography. URL: <https://www.cbs.mpg.de/events/29933/338749>

2017: Invited speaker at the short course "Signal processing of neuronal recordings (Local Field Potentials)", Physics department at the National University of South, Bahía Blanca, Argentina.

2017: Assistant to the course "Evolution of Neural Computation" - Maldacena program, Prof. Alessandro Treves. Balseiro Institute, National University of Cuyo, Argentina.

2016: Teaching assistant at "José A. Balseiro 2016 Nuevas Tendencias de Investigación en Física Médica" (<http://fisica.cab.cnea.gov.ar/jab2016/>). Balseiro Institute, National University of Cuyo, Argentina.

2014: Teaching assistant at "José A. Balseiro 2014 Modelado en Neurociencias" (<http://fisica.cab.cnea.gov.ar/escuelaib2014-neurociencias>). Balseiro Institute, National University of Cuyo, Argentina.

2013: Assistant to the 36th European Conference on Visual Perception (ECPV 2013), 25/29 August 2013, Bremen, Germany.

2013: **Invited Member** of the First ICTP FPGA Expert Meeting "Scientific Applications of FPGA Technology: Challenges and Opportunities", International Centre for Theoretical Physics (ICTP-UNESCO), Trieste, Italy (<http://indico.ictp.it/event/a13352/>)

2012: Assistant to the Joint ICTP-TWAS Latin-American Advanced Course on FPGA Design for Scientific Instrumentation, Habana, Cuba (<http://agenda.ictp.it/smr.php?2384>).

2010 Assistant to the ICTP Latin-American Basic Course on FPGA Design for Scientific Instrumentation, FPGA technology and firmware programming school, Mar del Plata, Argentina (<http://agenda.ictp.it/smr.php?2177>).

Grants

C016-2016: **Principal Investigator**. Amount: AR\$ 14,000. SECTyP National University of Cuyo, Argentina.

C018-2016: **Co-investigator**. Amount: AR\$ 14,000. SECTyP National University of Cuyo, Argentina.

PICT-2014-1966: **Co-investigator**. Amount: AR\$ 600,000. Type A: Strategic development plan of Argentina 2020. National Agency of Scientific and Technological Promotion (ANPCYT), Argentina (<http://www.agencia.mincyt.gov.ar>).

PICT-2012-0702: **Principal Investigator**. Amount: AR\$ 60,000. Type B: Young investigator. National Agency of Scientific and Technological Promotion (ANPCYT), Argentina (<http://www.agencia.mincyt.gov.ar>).

ANR 600-0036/10 (2011): **Collaborator**. Amount: AR\$ 522,000. National Agency of Scientific and Technological Promotion (ANPCYT), Argentina (<http://www.agencia.mincyt.gov.ar>).

PICT-2005-26209: **Collaborator**. Amount: AR\$ 700,000. National Agency of Scientific and Technological Promotion (ANPCYT), Argentina (<http://www.agencia.mincyt.gov.ar>).

Patents

Amarillo Y, **Dellavale D**, Nadal M, Portillo J (2018), Electronic system for concurrent implementation of patch clamp and dynamic clamp techniques in neuronal activity recording experiments. Argentina Patent (AR108504A1). URLs: <https://patents.google.com/patent/AR108504A1/en>
<https://nuclea.cnea.gob.ar/items/a11f0f5a-d8a9-41dc-8a0e-4b959f41d68b/full>

Peer-reviewed publications

1. Hernandez H, Pedraza L K... **Dellavale D**,... García A M, Ibáñez A* (2026). Speech clocks decode dementia phenotypes, social exposome, and biological aging, Accepted in Science Advances (May 2026).
2. Belloli L, Bruno N, Anghinah R, Güntekin B, Hanoğlu L, **Dellavale D**, Prado P, Parra MA, Cuadros J, Hernandez H, Ibáñez A, Sitt J (2026). Clinical generalizability of EEG-based dementia classifiers: a multi-center approach to Alzheimer's, MCI, and FTD, Submitted to Nature Aging (May 2026).
3. Mostert C M, Nguyen T A, **Dellavale D**, Ibáñez A (2026). Addressing core mechanisms of cognitive decline in HIV: The role of economic insecurity, exposomic adversity, and multimorbidity, Submitted to The Lancet Healthy Longevity (May 2026).
4. Mostert C M*, Udeh-Momoh C, Cotter E, Merali Z, McLaughlin C, Holzapfel D, Vradenburg G, Eyre H, Salama M, Fieggen G, Ali S, El Mekkaoui N, Atkins K, Benjamin K, Nightingale S, Norton L, Maina R, Dean W, Longwe G, Okoye C, Njamnshi A K, Maya S, Kahn J G, Apeagyei A E, Ogunniyi A, Kambongi M, Bitá M, Sodi T, Ayadi R, Farombi T, Omuojine J P, Nguyen T A, **Dellavale D**, Kumar M, Trepel D, Ataguba J E & Ibáñez A (2026). Closing brain health gaps across the life course in Africa through economic interventions, Accepted in Nature Health (May 2026).
5. Amoruso L,... **Dellavale D**,... Ibáñez A (2026), Multilingual experience is linked to delayed brain aging and increased network specialization, Submitted to Proc Natl Acad Sci USA (April 2026).

6. Jarne C, Hazelton J,... **Dellavale D**,... Migeot J, Ibáñez A* (2026). Neuropsychiatric symptoms track accelerated whole-brain and circuit-specific clocks across ageing and dementia, Submitted to Brain (March 2026).
7. **Dellavale D***, Godoy M E, Mostert C, Duran Aniotz C, Ibáñez A (2026), Cross-continental Associations Between ABO And Rh Blood Group Phenotypes And Dementia-spectrum Diseases, Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-A-6905-AAIC. URL: <https://tinyurl.com/ABOphenotypes>
8. **Dellavale D***, Moguilner S, Cuadros Castro J, Coronel-Oliveros C, Fernández-Corazza M, Collavini S, Kambongi M, Mohan A, Vanneste S, Romero-Ortuno R, Jonsson M G, Teckentrup V, Lopez Valdes A, García A, Golombek D, Ibáñez A (2026), Non-invasive Biophysical Neuromodulation To Reduce Functional Brain Aging, Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-DTA-11908-AAIC. URL: <https://tinyurl.com/NIBN4BA>
9. **Dellavale D***, Cuadros Castro J, Prado P, Moguilner S, Coronel-Oliveros C, Tollefsen M, Norton L, Romero-Ortuno R, Lopez Valdes A, Ibáñez A (2026). Decoding the brain's symphony: Oscillations, broadband activity, and paroxysmal salient events in the human encephalographic activity. Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-DTA-11965-AAIC. URL: <https://tinyurl.com/AAIC2026SNE>
10. **Dellavale D***, Mostert C M, Ibáñez A, Nguyen T A (2026). Beyond one-size-fits-all in dementia prevention: A global exploration of dementia association with various risk factors. Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-DTA-13741-AAIC. Selected for oral presentation. URL: <https://tinyurl.com/AAIC2026DRM>
11. **Dellavale D***, Mostert C M, Hernandez H, Legaz A, Moguilner S, Coronel-Oliveros C, Cuadros Castro J, Maina R, Omuojine J-P, Deivasigamani R K, Godoy M E, Duran Aniotz C, Mc Glinchey E, Ibáñez A (2026). Complex cross-continental interactions between ABO and Rh blood group phenotypes and exposome indicators. Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-DTA-13711-AAIC. URL: <https://tinyurl.com/AAIC2026ABOEXP>
12. Mostert C*, **Dellavale D**, Omuojine J-P, Atkins K, Trepel D, Mercadier M, Ibáñez A (2026). Global macroeconomic factors and their influence on dementia across 126 countries. Alzheimer's Association International Conference (AAIC), London, UK. Abstract No. 2026-DTA-12850-AAIC. Selected for oral presentation.
13. Legaz A, Moguilner S,... **Dellavale D**,... Hernandez H*, Ibáñez A* (2026), The exposome of brain aging across 34 countries, Nature Medicine, 2026 Apr 3. URL: <https://www.nature.com/articles/s41591-026-04302-z>
14. **Dellavale D***, Troisi Lopez E, Romano A, Rabuffo G, Sorrentino P* (2026), Linking local and large-scale salient events with oscillatory and broadband arrhythmic activities in the resting human brain, Imaging Neuroscience (Cambridge), 4:IMAG.a.1193. DOI: [10.1162/IMAG.a.1193](https://doi.org/10.1162/IMAG.a.1193) bioRxiv DOI: [10.1101/2024.02.28.582552](https://doi.org/10.1101/2024.02.28.582552)
15. **Dellavale D***, Troisi Lopez E, Romano A, Rabuffo G, Sorrentino P (2025), Characterization Of Local And Large-scale Paroxysmal Events Observed In The Human Brain Activity, Alzheimer's Association International Conference (AAIC) Neuroscience Next 2025, Buenos Aires, Argentina. URL: <https://tinyurl.com/AAIC2025dellavale>

16. Ueda T, Garnier E, **Dellavale D**, Bartolomei F, Bénar CG* (2025), Identification of the epileptogenic zone using phase-amplitude coupling on ictal electroencephalography: authentic or spurious PAC?, *Clinical Neurophysiology* 174, 151-159. DOI: [10.1016/j.clinph.2025.03.029](https://doi.org/10.1016/j.clinph.2025.03.029)
Processing tool: <https://github.com/damian-dellavale/Time-Locked-Index>
17. Acerbo E, Botzanowski B, **Dellavale D**, Stern MA, Cole ER, et al. (2024), Improved Temporal Focality of Non-invasive Deep-brain Stimulation using Pulses Temporally Interfering Electric Fields with Applications in Epilepsy, Submitted to *Brain Stimulation*.
bioRxiv DOI: [10.1101/2024.01.11.575301](https://doi.org/10.1101/2024.01.11.575301)
ssrn DOI: [10.2139/ssrn.4849682](https://doi.org/10.2139/ssrn.4849682)
18. **Dellavale D***, Bonini F, Pizzo F, Makhalova J, Wendling F, Badier JM, Bartolomei F, Bénar CG* (2023), Spontaneous fast-ultradian dynamics of polymorphic interictal events in drug-resistant focal epilepsy, *Epilepsia* 64(8), 2027-2043. DOI: [10.1111/epi.17655](https://doi.org/10.1111/epi.17655)
medRxiv DOI: [10.1101/2023.04.05.23288085](https://doi.org/10.1101/2023.04.05.23288085)
Processing tool: <https://github.com/damian-dellavale/node>
19. Acerbo E, Botzanowski B, **Dellavale D**, Stern M, Cole E, Drane D, Gross R, Williamson A* (2023), Enhancing Electrical Stimulation Mapping: Non-Invasive Pulsed Stimulation via Temporal Interference, Annual Meeting of the American Epilepsy Society (AES 2023). URL: <https://aesnet.org/abstractslisting/enhancing-electrical-stimulation-mapping-non-invasive-pulsed-stimulation-via-temporal-interference>
20. **Dellavale D***, Badier J M, Bonini F, Dauly G, Wendling F, Bénar C G* (2021), Data driven features learning based on a weak supervision paradigm for detection and clustering of epileptiform waveforms observed in local field potential recordings, Bernstein Conference 2021.
DOI: [10.12751/nncn.bc2021.p057](https://doi.org/10.12751/nncn.bc2021.p057)
Video: <https://youtu.be/PfJyadRk4K0>, <https://youtu.be/RjUmVtsAhPg>
21. Arnaldi L H* and **Dellavale H D*** (2021), Oversampled filter bank channelizer for cryogenic detectors, *Rev. Sci. Instrum.* 92, 023304. DOI: [10.1063/5.0035449](https://doi.org/10.1063/5.0035449)
22. Velarde O, Mato G*, **Dellavale D*** (2020), Adaptive neuromodulatory scheme based on deep reinforcement learning, Bernstein Conference 2020. DOI: [10.12751/nncn.bc2020.0234](https://doi.org/10.12751/nncn.bc2020.0234)
Video: <https://youtu.be/RZHd9xYWCec>
23. Zizumbo Colunga J, Parra S, Urdapilleta E, **Dellavale D*** (2020), Cross frequency couplings and directionality between neuronal oscillations in the somatosensory pathway of macaque monkeys during a vibrotactile discrimination task, Bernstein Conference 2020.
DOI: [10.12751/nncn.bc2020.0283](https://doi.org/10.12751/nncn.bc2020.0283)
24. Parra Sánchez S, Zizumbo Colunga J, **Dellavale D**, Urdapilleta E* (2020), On some differences between multiunit and single-unit coding properties in behaving animals, Bernstein Conference 2020. DOI: [10.12751/nncn.bc2020.0156](https://doi.org/10.12751/nncn.bc2020.0156)
25. **Dellavale D***, Velarde O, Mato G, Urdapilleta E* (2020), Complex interplay between spectral harmonicity and different types of cross frequency couplings in non linear oscillators and biologically plausible neural network models, *Phys. Rev. E* 102(6), 062401.
DOI: [10.1103/PhysRevE.102.062401](https://doi.org/10.1103/PhysRevE.102.062401)
bioRxiv DOI: [10.1101/2020.10.15.341800](https://doi.org/10.1101/2020.10.15.341800)
Processing tool: <https://github.com/damian-dellavale/Time-Locked-Index>

26. **Dellavale D***, Urdapilleta E, Cámpora N, Velarde O, Kochen S, Mato G (2020), Two types of ictal phase-amplitude couplings in epilepsy patients revealed by spectral harmonicity of intracerebral EEG recordings, *Clinical Neurophysiology*, Vol. 131, No. 8, 1866-1885.
DOI: <https://doi.org/10.1016/j.clinph.2020.04.160>
bioRxiv DOI: [10.1101/2020.03.13.991299](https://doi.org/10.1101/2020.03.13.991299)
27. **Dellavale D***, Rosselló J M (2019), Cross-frequency couplings in non-sinusoidal dynamics of interacting oscillators: Acoustic estimation of the radial position and spatial stability of nonlinear oscillating bubbles, *Ultrasonics Sonochemistry*, 51, 424-438. DOI: [10.1016/j.ultsonch.2018.07.026](https://doi.org/10.1016/j.ultsonch.2018.07.026)
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