

Héctor Damián Dellavale Clara

✉ dellavaledamian@gmail.com, ddellavale@comahue-conicet.gov.ar

Personal website: <https://damian-dellavale.github.io>

PhD in Engineering Science

March 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 (M/EEG) for translational research in neuroscience and biomedical applications. Epilepsy. Prodromal biomarkers of neurodegenerative diseases. Autonomic dysfunctions. Biophysical and sensory neuromodulation (tDCS, tACS, tRNS, TIS, TMS). 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

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, Chaos, IEEE Transactions on Neural Systems & Rehabilitation Engineering, IEEE Journal of Translational Engineering in Health & Medicine, PLOS ONE, Signal Processing (Elsevier), Biomedical signal processing and control (Elsevier), Clinical Neurophysiology (Elsevier).

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: Review 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

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. **Dellavale D***, Godoy M E, Mostert C, Duran Aniotz C, Ibañez A (2026), Cross-continental Associations Between ABO And Rh Blood Group Phenotypes And Dementia-spectrum Diseases, Abstract submitted to the Alzheimer's Association International Conference (AAIC), July 12 -15, 2026, London, United Kingdom.
URL: <https://tinyurl.com/ABOphenotypes>
2. **Dellavale D***, Moguilner S, Cuadros Castro J, Coronel-Oliveros C, Fernández-Corazza M, Collavini S, Kambongi M, Mohan A, Vanneste S, Romero-Ortuno R, Gortz Jonsson M, Teckentrup V, Lopez Valdes A, Ibañez A (2026), Non-invasive Neuromodulation For Brain Health, Abstract accepted in the AAIC Satellite Symposium, April 30-May 1, 2026, Istanbul, Turkey.
URL: <https://tinyurl.com/tES4BrainHealth>
3. Legaz A, Moguilner S,... **Dellavale D**,... Hernandez H*, Ibañez A* (2026), The exposome of brain aging across 34 countries, Accepted in Nature Medicine (February 2026).
4. **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, Accepted in Imaging Neuroscience (March 2026). 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)
5. **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, 24th - 27th February 2025, Buenos Aires, Argentina.
URL: <https://tinyurl.com/AAIC2025dellavale>
6. Ueda T, Garnier E, **Dellavale D**, Bartolomei F, Bénar CG (2024), 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>
7. 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)
8. **Dellavale D**, Bonini F, Pizzo F, Makhlova 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>

9. 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>
10. **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>
11. 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)
12. 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>
13. 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)
14. 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)
15. **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>
16. **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)
17. **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)
18. Velarde O, Urdapilleta E, Mato G*, **Dellavale D*** (2019), Bifurcation structure determines different phase-amplitude coupling patterns in the activity of biologically plausible neural networks, NeuroImage, Vol. 202, No. 116031. DOI: [10.1016/j.neuroimage.2019.116031](https://doi.org/10.1016/j.neuroimage.2019.116031)

19. **Dellavale D***, Urdapilleta E, Cámpora N, Velarde O, Kochen S, Mato G (2018), Characterization of cross frequency couplings produced by harmonic and non-harmonic frequency bands during seizure activity from intracerebral recordings in patients candidate to epilepsy surgery, Society for Neuroscience annual meeting 2018, San Diego - California, USA.
URL: <https://abstractsonline.com/pp8/#!/4649/presentation/26010>
20. Mato G, Velarde O, Urdapilleta E, **Dellavale D*** (2018), Mechanisms of cross-frequency coupling in network models of Parkinson's disease, Society for Neuroscience annual meeting, San Diego - California, USA. URL: <https://abstractsonline.com/pp8/#!/4649/presentation/30271>
21. Velarde O, Mato G, **Dellavale D*** (2017), Mechanisms for pattern specificity of deep-brain stimulation in Parkinson's disease, PLOS ONE 12(8): e0182884.
DOI: [10.1371/journal.pone.0182884](https://doi.org/10.1371/journal.pone.0182884)
Model source code: <https://modeldb.science/260949>
22. **Dellavale D*** and Rosselló J M (2016), Cross-frequency coupling and phase synchronization in nonlinear acoustics, Proceedings of Meetings on Acoustics (Acoustical Society of America), Vol. 28, 055001. DOI: [10.1121/2.0000294](https://doi.org/10.1121/2.0000294). 22nd International Congress on Acoustics ICA2016, Buenos Aires, Argentina (<http://ica2016.org.ar/>)
23. Rosselló J M*, **Dellavale D** and Bonetto F (2016), Positional stability and radial dynamics of sonoluminescent bubbles under bi-harmonic driving: Effect of the high-frequency component and its relative phase, Ultrasonics Sonochemistry, Vol. 31, pp. 610–625.
DOI: [10.1016/j.ultsonch.2016.02.013](https://doi.org/10.1016/j.ultsonch.2016.02.013)
24. Rosselló J M*, **Dellavale D** and Bonetto F (2015), Stable tridimensional bubble surfaces in multibubble sonoluminescence, Ultrasonics Sonochemistry, Vol. 22, pp. 59-69.
DOI: [10.1016/j.ultsonch.2014.06.003](https://doi.org/10.1016/j.ultsonch.2014.06.003)
25. **Dellavale D**, Kock M, Blume H*, Alam M, Schwabe K and Krauss J K* (2014), Implementation of Phase-to-Amplitude Coupling Analysis Algorithms in Deep Brain Stimulation Devices, 48th DGBMT Annual Conference, Hannover - Germany. Published in the Joint journal of the German Society for Biomedical Engineering in VDE and the Austrian and Swiss Societies for Biomedical Engineering, Vol 59 (S1), 2014 by Walter de Gruyter - Berlin - Boston. ISSN 0013-5585.
DOI: [10.1515/bmt-2014-5002](https://doi.org/10.1515/bmt-2014-5002)
26. **Dellavale D**, Leibold C, Payá-Vayá G, Blume H*, Alam M, Schwabe K, and Krauss J K* (2013), Optimization of a Phase-to-Amplitude Coupling Algorithm for Real-Time processing of Brain Electrical Signals, ICT.OPEN Conference, Eindhoven, Netherlands. URL: https://www.researchgate.net/publication/260614486_Optimization_of_a_Phase-to-Amplitude_Coupling_Algorithm_for_Real-Time_Processing_of_Brain_Electrical_Signals
27. Rosselló J M*, **Dellavale D** and Bonetto F (2013), Energy concentration and positional stability of sonoluminescent bubbles in sulfuric acid for different static pressures, Physical Review E, Vol. 88, 033026. DOI: [10.1103/PhysRevE.88.033026](https://doi.org/10.1103/PhysRevE.88.033026)
28. Rechiman L M*, **Dellavale D** and Bonetto F (2013), Path suppression of strongly collapsing bubbles at finite and low Reynolds numbers, Physical Review E, Vol. 87, 063004.
DOI: [10.1103/PhysRevE.87.063004](https://doi.org/10.1103/PhysRevE.87.063004)
29. Rechiman L M*, **Dellavale D**, Bonetto F (2012), Numerical description of moving single bubble sonoluminescence state in sulfuric acid, X Argentinian Conference on Computational Mechanics (MECOM 2012), Salta, Argentina. URL: <https://cimec.org.ar/ojs/index.php/mc/article/view/4064>

30. **Dellavale D***, Rechiman L, Rosselló J M and Bonetto F (2012), Upscaling energy concentration in multi-frequency single bubble sonoluminescence with strongly degassed sulfuric acid, *Physical Review E*, Vol. 86, 016320. DOI: [10.1103/PhysRevE.86.016320](https://doi.org/10.1103/PhysRevE.86.016320)
31. Bellotti M, **Dellavale D**, Fabián Bonetto F* (2012), A new technique to detect ocular pathologies based on electrical measurement implemented on programmable logic, *IEEE Trans. on Inst. & Meas.*, Vol. 61, No. 12. DOI: [10.1109/TIM.2012.2210458](https://doi.org/10.1109/TIM.2012.2210458)
32. Bast W*, **Dellavale D**, Bonetto F (2011), FPGA implementation of a "Dynamic-Clamp" system, *Proc. of VII Southern Programmable Logic Conference (SPL11)*, ISBN: 978-1-4244-8847-6, pp. 167-172, Córdoba, Argentina. DOI: [10.1109/SPL.2011.5782643](https://doi.org/10.1109/SPL.2011.5782643)
33. **Dellavale D***, Urteaga R, Bonetto F (2010), Analytical study of the acoustic field in a spherical resonator for single bubble sonoluminescence, *J. Acoust. Soc. Am.*, Vol. 127 (1), 186-197. DOI: [10.1121/1.3257208](https://doi.org/10.1121/1.3257208)
34. Iriarte Muñoz J M*, **Dellavale D**, Sonnaillon M O, Bonetto F (2009), Real - time particle image velocimetry based on FPGA technology, *IEEE Proc. of V Southern Programmable Logic Conference (SPL09)*, ISBN: 978-1-4244-3847-1, pp. 147-152, Sao Carlos, Brazil. DOI: [10.1109/SPL.2009.4914899](https://doi.org/10.1109/SPL.2009.4914899)
35. **Dellavale D***, Sonnaillon M O, Bonetto F (2008), FPGA Based Multi-Harmonic Control System for Single Bubble Sonoluminescence, *IEEE Proc. of IV Southern Programmable Logic Conference (SPL08)*, ISBN: 978-1-4244-1992-0, pp. 269-272, Bariloche, Argentina. DOI: [10.1109/SPL.2008.4547774](https://doi.org/10.1109/SPL.2008.4547774)
36. Urteaga R*, **Dellavale D**, Puente G F and Bonetto F (2008), Experimental study of transient paths to the extinction in sonoluminescence, *J. Acoust. Soc. Am.*, Vol. 124 (3), 1490-1496. DOI: [10.1121/1.2903854](https://doi.org/10.1121/1.2903854).
37. Urteaga R*, **Dellavale D**, Puente G F and Bonetto F (2007), Positional stability as the light emission limit in sonoluminescence with sulfuric acid, *Physical Review E*, Vol. 76, 056317. DOI: [10.1103/PhysRevE.76.056317](https://doi.org/10.1103/PhysRevE.76.056317)

Publications without peer-review process

1. **Dellavale D***, Troisi Lopez E, Romano A, Rabuffo G, Sorrentino P (2024), Linking neuronal avalanches with oscillatory and broadband 1/f activities in the resting human brain, 39th Annual meeting of the Sociedad Argentina de Investigación en Neurociencias, SAN2024, 25th - 27th October 2024, Universidad de Buenos Aires, Argentina.
URL abstract: <https://csan2024.saneurociencias.org.ar/d-099-linking-neuronal-avalanches-with-oscillatory-and-broadband-1-f-activities-in-the-resting-human-brain/>
URL poster: https://damian-dellavale.github.io/posters/san2024_poster_dellavale.pdf
2. Castillo García M, Urdapilleta S, **Dellavale D**, Urdapilleta E* (2022), Influencia del acoplamiento eléctrico entre neuronas inhibitorias en la modulación del ritmo theta sobre las oscilaciones gamma en un modelo in silico, 107a Reunión de la Asociación Física Argentina, San Carlos de Bariloche, Río Negro, Argentina. URL: <https://www.fisica.org.ar/>
3. Gesualdi F and **Dellavale D*** (2018), In vivo light-tissue interaction: Spatio-temporal and spectro-temporal characterization of the photoplethysmographic signal, Machine Learning Summer School, Buenos Aires, Argentina. URL: <http://mlss2018.net.ar/>

4. Gesualdi F and **Dellavale D*** (2017), Interacción de la luz con tejido vivo: caracterizaciones espacio-temporal y espectral-temporal simultáneas de la señal fotopleletismográfica [*Light-tissue interaction: Spatio-temporal and spectro-temporal simultaneous characterization of the photoplethysmographic signal*], 102nd National Meeting of Argentinian Physics Society (AFA), La Plata, Buenos Aires, Argentina. URL: <https://www.fisica.org.ar/>
5. Velez J, Gesualdi F, Velarde O, Urdapilleta E and **Dellavale D*** (2017), Acoplamiento inter-frecuencia en fotopleletismografía como potencial biomarcador para la caracterización in vivo de sistemas fisiológicos [*Cross frequency coupling in photoplethysmography for the characterization of physiological systems*], 102nd National Meeting of Argentinian Physics Society (AFA), La Plata, Buenos Aires, Argentina. URL: <https://www.fisica.org.ar/>
6. Velarde O, Urdapilleta E, Mato G, **Dellavale D*** (2017), Génesis de acoplamiento inter-frecuencia en los ganglios de la base asociado al desarrollo de trastornos motores [*Mechanisms of cross frequency couplings in the parkinsonian basal ganglia*], 102nd National Meeting of Argentinian Physics Society (AFA), La Plata, Buenos Aires, Argentina. URL: <https://www.fisica.org.ar/>
7. Calderón A H, Capellino R A, **Dellavale D**, Franco D L, Gleiser P M, Lindenbaum S, López-Wortzman M, Riva S C, Roman F R, Risau-Gusman S (2017), Sleep quality, chronotype and social jet lag of adolescents from a population with a very late chronotype. 25 International Congress of Psychiatry organized by the Argentinean Psychiatry Society (AAP), Buenos Aires, Argentina. URL: <http://www.aap.org.ar>
XXXII Congress of the Argentinian Society for Neuroscience, Mar del Plata, Argentina. URL: <http://www.saneurociencias.org.ar/congreso-san2017/>
arXiv DOI: <https://arxiv.org/abs/2103.10795>
8. Velarde O, Mato G, **Dellavale D*** (2016), Mechanisms for pattern specificity of deep-brain stimulation in Parkinson's disease, 2nd Congress of the Federation of Latin-American and Caribbean Societies for Neuroscience (FALAN), Buenos Aires, Argentina. URL: https://falan-ibrolarc.org/book_FALAN.pdf
9. Velez J, Urdapilleta U, Velarde O, Mato G, **Dellavale D*** (2016), Cross frequency coupling analysis of local field potentials recorded from rat hippocampal and parahippocampal regions during behavioral tasks, 2nd Congress of the Federation of Latin-American and Caribbean Societies for Neuroscience (FALAN), Buenos Aires, Argentina. URL: <http://falan-ibrolarc.org/drupal/es/content/welcome-2nd-falan-congress-2016-buenos-aires>
10. Velarde O, **Dellavale D***, Mato G* (2015), Study of the basal ganglia network dynamics with applications to closed-loop deep brain stimulation paradigms. XXX Congress of the Argentinian Society for Neuroscience (Congress and course: State-of-the-art methods in Neuroscience Research), Mar del Plata, Argentina. URL: <http://www.saneurociencias.org.ar/>
11. Ferreiro I, Cappagli P, **Dellavale D*** (2015), Desarrollo de un tomógrafo de impedancia eléctrica con capacidad de procesamiento en tiempo real [*Design and implementation of a table-top system for real time electrical impedance tomography*], 100th National Meeting of Argentinian Physics Society (AFA), Villa de Merlo, San Luis, Argentina. URL: <https://www.fisica.org.ar/>
12. Rosselló J M*, **Dellavale D**, Bonetto F (2015), Efecto de la componente de alta frecuencia del campo acústico sobre la estabilidad posicional de una burbuja sonoluminiscente con excitación bi-armónica [*Positional stability of a sonoluminescent bubble under bi-harmonic driving*], 100th National Meeting of Argentinian Physics Society (AFA), Villa de Merlo, San Luis, Argentina. URL: <https://www.fisica.org.ar/>

13. **Dellavale D***, Rosselló J M, Bonetto F (2014), Confinamiento Dielectroforético de una Burbuja Sonoluminiscente (DC - SBSL) [*Dielectrophoretic confinement of a sonoluminescent bubble*], XIII Meeting on Recent Advances in Physics of Fluids and its Applications, November 2014, Tandil, Argentina. URL: <http://www.exa.unicen.edu.ar/fluidos2014/>
14. Rosselló J M*, **Dellavale D** and, Bonetto F (2013), Multi-bubble clusters in sonoluminescence for a cylindrical resonator and bi-harmonic driving, XIII Latin American Workshop on Nonlinear Phenomena (LAWNP), Córdoba, Argentina.
15. Rosselló J M*, **Dellavale D** and Bonetto F (2013), Stability map and energy focusing of sonoluminescent bubbles in sulphuric acid for different static pressures, XIII Latin American Workshop on Nonlinear Phenomena (LAWNP), Córdoba, Argentina.
16. Rosselló J M*, **Dellavale D**, Bonetto F (2013), Superficies tridimensionales de burbujas sonoluminiscentes en un resonador cilíndrico con excitación multi-frecuencia [*Tridimensional bubble surfaces in a cylindrical acoustic resonator under multi-frequency driving*], 98th National Meeting of Argentinian Physics Society (AFA), San Carlos de Bariloche, Argentina. URL: <https://www.fisica.org.ar/>
17. Rosselló J M*, **Dellavale D**, Bonetto F (2013), Efecto de la presión estática sobre la estabilidad posicional y la concentración de energía en sonoluminiscencia (SBSL) [*The role of the static pressure on the positional stability and energy concentration of sonoluminescent bubbles*], 98th National Meeting of Argentinian Physics Society (AFA), San Carlos de Bariloche, Argentina. URL: <https://www.fisica.org.ar/>
18. Rechiman L M*, **Dellavale D**, Bonetto F (2013), Simulaciones numéricas de la trayectoria de una burbuja moviéndose en un fluido viscoso a diferentes concentraciones de gas no-condensable [*Numerical simulations of a bubble trajectory in viscous fluid with different concentrations of non-condensable gas*], 98th National Meeting of Argentinian Physics Society (AFA), San Carlos de Bariloche, Argentina. URL: <https://www.fisica.org.ar/>
19. **Dellavale D***, Rosselló J M, Bonetto F (2012), Confinamiento Inercial de una Burbuja Sonoluminiscente (IC-SBSL) [*Inertial confinement of a sonoluminescent bubble*], XII Meeting on Recent Advances in Physics of Fluids and Applications, Buenos Aires, Argentina.
20. Rechiman L M*, **Dellavale D**, Bonetto F (2012), History force influence on strongly driven oscillating bubbles at finite Reynolds numbers, XII Meeting on Recent Advances in Physics of Fluids and Applications, Buenos Aires, Argentina.
21. **Dellavale D***, Rechiman L, Bonetto F (2012), Análisis de componentes principales como herramienta para el estudio de la inestabilidad posicional en el fenómeno de sonoluminiscencia con excitación multi-frecuencia [*Principal component analysis for the study of positional instability in multi-frequency single bubble sonoluminescence*], 97th National Meeting of Argentinian Physics Society (AFA), Córdoba, Argentina. URL: <https://www.fisica.org.ar/>
22. Rechiman L*, **Dellavale D**, Bonetto F (2012), Fuerzas hidrodinámicas actuantes sobre una burbuja excitada bi-armónicamente [*Hydrodynamic forces on a bi-harmonically driven bubble*], 97th National Meeting of Argentinian Physics Society (AFA), Córdoba, Argentina. URL: <https://www.fisica.org.ar/>
23. Bellotti M*, **Dellavale D**, Bonetto F (2012), Mediciones de Impedancia eléctrica basadas en Lógica programable para la detección de patologías oculares [*Measurement of the electrical bio-impedance to detect ocular pathologies using programmable logic devices*], 97th National Meeting of Argentinian Physics Society (AFA), Córdoba, Argentina. URL: <https://www.fisica.org.ar/>

24. Rosselló J M*, **Dellavale D**, Bonetto F (2011), Caracterización de una cámara acústica esférica con aplicación al estudio de la dinámica de una burbuja sonoluminiscente (SBSL) [*Characterization of a spherical acoustic chamber with applications to the study of the dynamics of a single sonoluminescent bubble*], II Joint Meeting of Argentinian Physics Society (AFA)-SUF, Montevideo - Uruguay. URL: <https://www.fisica.org.ar/>
25. Bast W*, **Dellavale D**, Carnevale F and Bonetto F (2010), FPGA implementation of a dynamic-clamp system. Second Joint Meeting of the Argentinian Society for Neuroscience and the Argentine Workshop in Neuroscience, Córdoba, Argentina.
26. Bast W*, **Dellavale D**, Pastoriza H and Bonetto F (2009), Micromachined Electrodes for Neuronal Recording and Stimulation, First Neuroscience Meeting - Argentinian Neuroscience Society (School and Conference), Córdoba, Argentina.
27. **Dellavale D*** (2008), Spectral analysis of the predictive fractional order hold, Proc. of IV International Conference of Applied Mathematics and Teaching of Mathematics in Engineering (INMAT08), Buenos Aires, Argentina.
28. **Dellavale D***, Urteaga R and Bonetto F (2006), Alteraciones en el campo de presión de un resonador esférico producidas por una burbuja sonoluminiscente [*Acoustic pressure field in a spherical resonator for Single Bubble Sonoluminescence*], 91st National Meeting of Argentinian Physics Society (AFA), San Luis, Argentina. URL: <https://www.fisica.org.ar/>
29. Urteaga R*, **Dellavale D**, Martinez P G and Bonetto F (2006), Determinación del estado de una burbuja sonoluminiscente a través de mediciones de luz dispersada [*Study of the dynamics of a single single sonoluminescent bubble based on measurements of the scattered light*], 91st National Meeting of Argentinian Physics Society (AFA), San Luis, Argentina. URL: <https://www.fisica.org.ar/>
30. Urteaga R*, **Dellavale D**, Puente G F and Bonetto F (2005), Determinación de la frontera de extinción de una burbuja Sonoluminiscente [*Study of the extinction threshold in Single Bubble Sonoluminescence*], 90th National Meeting of Argentinian Physics Society (AFA), Mar del Plata, Argentina. URL: <https://www.fisica.org.ar/>
31. Favret E, Fuentes N O, **Dellavale D**, Ferrero L (2005), ULOI: A new technique for the study of the temporal evolution of the damage in the materials surfaces, Proc. of Bi-national Conference SAM/CONAMET 2005, Mar del Plata, Argentina.

* = Corresponding author