Ezequiel Ferrero

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▬▬ Personal details / Datos personales

Full Name	Eduardo Ezequiel Ferrero
Profession	Physicist
Date of birth	February 6th 1981
Place of birth	Córdoba, Argentina
Citizenship	Argentinian & Italian
Personal	Married, father of three (paternal leaves 2017, 2023)

▬▬ Career / Carrera

April 2022 -...	**Maria Zambrano Fellow (contract)**, *Condensed Matter Department, Universidad de Barcelona*, Spain, (on leave from CONICET's researcher position).
Topic	Active matter and complex systems (Host: Dr. Carmen Miguel)
Jan 2018 -...	**Permanent Researcher**, *Condensed Matter Theory group, Centro Atómico Bariloche*, Argentina, Adjunct Researcher CONICET (Argentinean National Research Council).
Jan 2017 -Dec 2017	**Postdoc in Physics (contract)**, *Dipartimento di Fisica, Università degli Studi di Milano*, Italia.
Topic	Glasses and disordered metamaterials
Supervisor	Dr. Stefano Zapperi
May 2013 -Dec 2016	**Postdoc in Physics (contract)**, *Laboratoire Interdisciplinaire de Physique, Université Grenoble Alpes, Grenoble*, France.
Topic	Amorphous solids
Supervisor	Dr. Jean-Louis Barrat
Aug-Nov 2012	**Postdoc in Physics (sandwich fellowship)**, *LPTMS, Université Paris Sud, Orsay*, France.
Topic	Driven elastic interfaces in random media
Supervisor	Dr. Alberto Rosso
Apr 2011 - Apr 2013	**Postdoc in Physics (fellowship)**, *Solid State Theory group, Centro Atómico Bariloche*, Argentina.
Topic	Disordered Elastic Systems
Supervisors	Dr. Alejandro B. Kolton, Dr. Sebastián Bustingorry
Mar 2011	**Ph.D. in Physics ("Doctor en Física")**, *Universidad Nacional de Córdoba*, Argentina.
—	PhD Thesis
Title	"Relaxational dynamics of the q-state bidimensional Potts model: a contribution to the description of first order phase transitions non-equilibrium properties".
Advisor	Prof. Dr. Sergio A. Cannas
Dec 2005	**MS degree in Physics ("Licenciado en Física")**, *Universidad Nacional de Córdoba*, Argentina.

Scientific stays / Estadías científicas

Nov-Dec 2021   **LIPhy, Université Grenoble Alpes and LPTMS, Université Paris Sud**, *Grenoble and Paris, France*, IRP-CNRS Invited Researcher, Three working weeks.

Sep-Oct 2019   **LIPhy, Université Grenoble Alpes**, *Grenoble, France*, CNRS Invited Researcher, Two months stay.

Oct-Nov 2014   **KITP, University of California**, *Santa Barbara, USA*, Avalanches, Intermittency, and Nonlinear Response in Far-From-Equilibrium Solids, Three working weeks.

Aug-Nov 2012   **LPTMS, Université Paris Sud**, *Orsay, France*, Collaboration with Dr. Alberto Rosso, Four months stay.

Topic   Avalanches triggered by thermal activation in driven elastic lines on disorder media

Publications / Publicaciones

Preprints

1. *" Honeybee-like collective decision making in a kilobot swarm"*.
   David March, Julia Múgica, Ezequiel E. Ferrero, M. Carmen Miguel.
   arXiv:2310.15592 (2023)

Published research articles

28. *" Depinning free of the elastic approximation"*.
    Alejandro B. Kolton, Ezequiel E. Ferrero, Alberto Rosso.
    Phys. Rev. B **108**, 174201 (2023)

27. *"Temperature dependence of fast relaxation processes in amorphous materials"*.
    Gieberth Rodriguez-Lopez, Kirsten Martens, Ezequiel E. Ferrero.
    Phys. Rev. Materials **7**, 105603 (2023)

26. *"The Fate of Shear-Oscillated Amorphous Solids"*.
    C. Liu, E.E. Ferrero, E.A. Jagla, K. Martens, A. Rosso, L. Talon.
    J. Chem. Phys. **156**, 104902 (2022)

25. *"The yielding of amorphous solids at finite temperatures"*.
    E.E. Ferrero, A.B. Kolton, E.A. Jagla
    Phys. Rev. Materials **5**, 115602 (2021)

24. *"Universal Critical Exponents of the Magnetic Domain Wall Depinning Transition"*.
    L.J. Albornoz, E.E. Ferrero, A.B. Kolton, V. Jeudy, S. Bustingorry, J. Curiale
    Phys. Rev. B **104**, L060404 (2021)

23. *"Creep motion of elastic interfaces driven on disorder"*.
    E.E. Ferrero, L. Foini, T. Giamarchi, A.B. Kolton, A. Rosso.
    Annual Reviews: Condensed Matter Physics **12**, 111-134 (2021)

22. *"Properties of the density of shear transformations in driven amorphous solids"*.
    E.E. Ferrero, E.A. Jagla
    J. Phys.: Condens. Matter **33**, 124001 (2021)

21. *"Elastic Interfaces on Disordered Substrates: From Mean-Field Depinning to Yielding"*.
    E.E. Ferrero, E.A. Jagla
    Physical Review Letters **123**, 218002 (2019)

20. *"Criticality in elastoplastic models of amorphous solids with stress-dependent yielding rates"*.
    E.E. Ferrero, E.A. Jagla
    Soft Matter, **15**, 9041 (2019).

19. *"Deformation and flow of amorphous solids: Insights from elastoplastic models"*.
    A. Nicolas, E.E. Ferrero, K. Martens, J.-L. Barrat.
    Reviews of Modern Physics, **90**, 045006 (2018)

18. *"Creep dynamics of athermal amorphous materials: a mesoscopic approach"*.
C. Liu, E.E. Ferrero, K. Martens, J.-L. Barrat.
Soft Matter, **14**, 8306 (2018).

17. *"Damage accumulation in silica glass nanofibers"*.
S. Bonfanti, E.E. Ferrero, A.L. Sellerio, R. Guerra, and S. Zapperi.
Nano Letters **18**, 7, 4100 (2018).

16. *"Magnetic domain wall creep and depinning: a scalar field model approach"*.
N.B. Caballero, E.E. Ferrero, A.B. Kolton, J. Curiale, V. Jeudy, S. Bustingorry.
Physical Review E, **97**, 062122 (2018).

15. *"Spatiotemporal Patterns in Ultraslow Domain Wall Creep Dynamics"*.
E.E. Ferrero, L. Foini, T. Giamarchi, A.B. Kolton, A. Rosso.
Physical Review Letters, **118**, 147208 (2017).

14. *"Inertia and universality of avalanche statistics: The case of slowly deformed amorphous solids"*.
K. Karimi, E.E. Ferrero, J.-L. Barrat.
Physical Review E, **95**, 013003 (2017).

13. *"Driving rate dependence of avalanche statistics and shapes at the yielding transition"*.
C. Liu, E.E. Ferrero, F. Puosi, J.-L. Barrat, K. Martens.
Physical Review Letters, **116**, 065501 (2016).

12. *"Edwards thermodynamics for a driven athermal system with dry friction"*.
G. Gradenigo, E.E. Ferrero, E. Bertin, J.-L. Barrat.
Physical Review Letters, **115**, 140601 (2015).

11. *"Relaxation in yield stress systems through elastically interacting activated events"*.
E.E. Ferrero, K. Martens, J.-L. Barrat.
Physical Review Letters, **113**, 248301 (2014).

10. *"Parallel kinetic Monte Carlo simulation of Coulomb glasses"*.
E.E. Ferrero, A.B. Kolton, M. Palassini.
AIP Conference Proceedings, **1610**, 71 (2014).

9. *"Uniqueness of the thermodynamic limit for driven disordered elastic interfaces"*.
A.B. Kolton, S. Bustingorry, E.E. Ferrero and A. Rosso.
Journal of Statistical Mechanics: Theory and Experiment (JSTAT), P**12**004 (2013).

8. *"Numerical Approaches on Driven Elastic Interfaces in Random Media"*.
E.E. Ferrero, S. Bustingorry, A.B. Kolton, A. Rosso.
Comptes Rendus Physique, **14**, 641 (2013).

7. *"Non-steady relaxation and critical exponents at the depinning transition"*.
E.E. Ferrero, S. Bustingorry, A.B. Kolton.
Physical Review E, **87**, 032122 (2013).

6. *"Dynamical heterogeneities as fingerprints of a backbone structure in Potts models"*.
E.E. Ferrero, F. Romá, S. Bustingorry, P.M. Gleiser.
Physical Review E, **86**, 031121 (2012).

5. *"q-state Potts model metastability study using optimized GPU-based Monte Carlo algorithms"*.
E.E. Ferrero, J.P. De Francesco, N.Wolovick and S.A. Cannas.
Computer Physics Communications, **183**, 1578 (2012).

4. *"Short-time dynamics of finite-size mean-field systems"*.
C. Anteneodo, E.E. Ferrero and S.A. Cannas.
Journal of Statistical Mechanics: Theory and Experiment (JSTAT), P**07**026 (2010).

3. *"Non-equilibrium Characterization of Spinodal Points using Short Time Dynamics"*.
E.S. Loscar, E.E. Ferrero, T.S. Grigera and S.A. Cannas.
Journal of Chemical Physics, **131**, 024120 (2009)

2. *"Long-term ordering kinetics of the two-dimensional q-state Potts model"*.
E.E. Ferrero, S.A. Cannas.
Physical Review E **76**, 031108 (2007).

1. *"Phase separation of the Potts model in the square lattice"*.
M. Ibáñez de Berganza, E.E. Ferrero, S.A. Cannas, V. Loreto, A. Petri.
The European Physical Journal: Special Topics, **143**, 273 (2007).

Press and outreach / Prensa y medios

March 2020 **Interviewed**, *A year without conferences? How the coronavirus pandemic could change research*, Nature 579, 327-328 (2020), By Giuliana Viglione.

Fellowships-Scholarships-Awards / Becas-Premios

2015 **Best Poster Award**, *Programming and Tuning Massively Parallel Systems summer school (PUMPS)*, Barcelona, Spain.

2013 **Special Mention**, *in the frame of Juan José Giambiagi Prize 2013 to the best PhD Thesis in Physics defended in the country*, Argentinean Physics Society, Argentina.

2012 **Postdoctoral Fellowship**, *Bernardo Houssay Program*, MESR (France) - MINCyT (Argentina), Université Paris Sud, Orsay, France.

2011-2013 **Postdoctoral Fellowship**, *CONICET*, CAB, Bariloche, Argentina.

2009-2011 **Postgraduate Fellowship Type 2**, *CONICET*, UNC, Argentina.

2006-2009 **Postgraduate Fellowship Type 1**, *CONICET*, UNC, Argentina.

2005 **Graduate Thesis Scholarship**, *Córdoba's Governmental Science Agency*, UNC, Argentina, ConCiencias Program.

2004 **Exchange Scholarship**, *AUGM (Montevideo Universities Association)*, UFPR (Universidade Federal do Paraná), Brazil, ESCALA Program.

Teaching experience / Experiencia docente

2017 **Teaching Assistant**, *Università degli Studi di Milano*, Milan, Italy, Subject:"Introduction to Statistical Physics".

2012, 2021 **Honorary teacher**, *Instituto Balseiro*, Bariloche, Argentina, Subject:"Introduction to numerical computing in graphics processors (ICNPG)".

2008-2011 **Teaching Associate**, *Facultad de Ciencias Químicas, Universidad Nacional de Córdoba*, Subjects: "Mathematics I and II".

2004-2006 **Undergraduate Teaching Assistant**, *Facultad de Matemática, Astronomía y Física, Universidad Nacional de Córdoba*, Subjects: "Algebra II", "Thermodynamics and Statistical Mechanics I and II".

Teaching material publications

– *"Mathematics I: Guide for seminars and exercise classes"*.
E. Ferrero, B. Franzoni, J. Olmos, B. Oviedo, A. Paz, C. Sánchez.
Facultad de Ciencias Químicas – Universidad Nacional de Córdoba. 54 pages, (2009). v2016

Scientific events organization / Organización de eventos

2023 **Barcelona, Spain**, *XI GEFENOL Summer School on Statistical Physics of Complex Systems*, Organizer.

2021 **Buenos Aires, Argentina**, *Powders&Grains 2021*, Organizer.

2019 **Bariloche, Argentina**, *Yielding phenomena in disordered systems: the southernmost STATPHYS satellite*, Organizer.

2016	**Grenoble, France**, *Dynamical phase transitions in driven systems: contrasting depinning and yielding*, Organizer.
2014	**Grenoble, France**, *Driven Disordered Systems 2014*, Organizer.
2011	**Córdoba, Argentina**, *First Argentinean School on GPGPU Computing for Scientific Applications*, Organizer.

International schools / Participación en escuelas internacionales

Sep 2022	**Barcelona, Spain**, *Programming and Tuning Massively Parallel Systems summer school (PUMPS+AI 2022)*.
Jul 2017	**Como, Italy**, *Advances in complex systems: Lake Como School of Advanced Studies*.
Jul 2015	**Barcelona, Spain**, *Programming and Tuning Massively Parallel Systems summer school (PUMPS)*.
Feb 2012	**Trieste, Italy**, *Advanced School on Scientific Software Development: Concept and Tools*.
Dec 2011	**Santiago, Chile**, *Summer School and Workshop "Fluctuations and Nonequilibrium Systems 2011"*.
Aug 2009	**Leuven, Belgium**, *International Summer School: "Fundamental Problems in Statistical Physics XII"*.
Dec 2008	**San Carlos de Bariloche, Argentina**, *Santa Fe Institute (SFI) Complex Systems Summer School: "Foundations and Frontiers of Complex Systems"*.
Aug 2008	**Les Houches, France**, *Les Houches Summer School "Long-Range Interacting Systems"*.
Feb 2007	**Bento Goncalves, Brasil**, *2nd Latin American School and conference in Statistical Physics and Interdisciplinary Applications*.
Dec 2006	**Mar del Plata, Argentina**, *Pan American Scientific Institute (PASI) Summer School: "Disorder and Complexity"*.

Oral contributions / Presentaciones orales

At international conferences/workshop/schools

Nov 2022	**Grenoble, France**, *1ères Journées du GDR IDE "Interaction Désordre Élasticité"*, **workshop**, "The fate of shear-oscillated amorphous solids".
Aug 2022	**Lyon, France**, *Journées de la Matière Condensée (JMC) 2022*, **workshop**, "The fate of shear-oscillated amorphous solids".
June 2022	**Erice, Italy**, *Conference of the Middle European Cooperation in Statistical Physics (MECO47)*, **workshop**, "The yielding of amorphous solids at finite temperatures".
Sep 2021	**Spetses, Greece (virtual)**, *News from Disordered Elastic Systems*, **workshop**, "The yielding of amorphous solids at finite temperatures". (invited speaker)
Mar 2021	**USA (virtual)**, *APS March Meeting*, **conference**, "Avalanche statistics at the yielding transition of amorphous solids: universality in elastoplastic models (Abstract: V05.00003)".
Oct 2020	**Barcelona, Spain (virtual)**, *Workshop on Micromechanics, Statistics and Hazards of Mechanical Failure*, **workshop**, "Avalanche statistics at the yielding transition of amorphous solids: universality in elastoplastic models".
Feb 2019	**Les Houches, France**, *Avalanche Dynamics and Precursors of Catastrophic Events*, **workshop**, "An overview of universal avalanche statistics at the yielding transition of amorphous solids". (invited speaker)
Dec 2018	**Puerto Varas, Chile**, *Southern Workshop on Granular Materials 2018*, **workshop**, "Criticality and avalanches at the yielding transition of amorphous solids". (invited speaker)

Oct 2017   **Paris, France**, *Yielding of amorphous solids*, **workshop**, Involved chair role.

Oct 2016   **Dijon, France**, *8th Multiscale Materials Modeling international conference*, **conference**, "Avalanche statistics when approaching (or leaving) the yielding transition of amorphous solids".

Jul 2016   **Lyon, France**, *STATPHYS26*, **conference**, "Spatio-temporal patterns in ultra-slow creep dynamics of magnetic interfaces".

Jun 2016   **Aussois, France**, *Statphys26 satellite meeting:Statistical Physics of Materials*, **workshop**, "Avalanche statistics at the yielding transition of amorphous solids - driving rate dependence and inertial effects -".

Jun 2016   **Lyon, France**, *CECAM Workshop: The flow of amorphous solids, from atomistic simulations to Earth Science applications*, **workshop**, "Spatio-temporal patterns in ultra-slow domain wall creep dynamics".

Feb 2016   **Vienna, Austria**, *41st Conference of the Middle European Cooperation in Statistical Physics*, **conference**, "Driving rate dependence of avalanche statistics and shapes at the yielding transition".

Jul 2015   **Barcelona, Spain**, *Programming and Tuning Massively Parallel Systems summer school (PUMPS)*, **poster intro**, "A display of GPU implementations in Condensed Matter Physics: four distinctive cases".

Jun 2015   **Montpellier, France**, *ANR project meeting*, Laboratoire Charles Coulomb, Université Montpellier II, **mini workshop**.
"On the rate dependence of avalanche statistics and shapes at the yielding transition"

May 2015   **Montpellier, France**, *International Workshop on Dynamics in Viscous Liquids* , **conference**, "Relaxation in yield stress systems through elastically interacting activated events".

Mar 2015   **Buenos Aires, Argentina**, *Dynamics in soft and hard condensed matter*, **conference**, "Avalanches and relaxation in mesoscopic models of amorphous solids".

Dec 2014   **Grenoble, France**, *FAPRES ANR project kick-off meeting*, **mini workshop**, "Relaxation in yield stress systems through elastically interacting activated events".

Apr 2014   **Grenoble, France**, *The CIMENT cluster users' day*, **mini workshop**, "Mesoscopic simulations of amorphous systems using GPU-based algorithms".

Feb 2012   **Trieste, Italy**, *Advanced School on Scientific Software Development: Concept and Tools*, **school talk**, "GPU-implementation of the Langevin Dynamics for Driven Elastic Interfaces in Random media".

Aug 2009   **Leuven, Belgium**, *International Summer School: "Fundamental Problems in Statistical Physics XII"*, **poster intro**, "Non-equilibrium Characterization of Spinodal Points using Short Time Dynamics".

Dec 2008   **San Carlos de Bariloche, Argentina**, *SFI Complex Systems Summer School: "Foundations and Frontiers of Complex Systems"*, **poster intro**, "Network effects on game dynamics".

Aug 2008   **Les Houches, France**, *Les Houches Summer School "Long-Range Interacting Systems"*, **school talk**, "Long-term ordering kinetics of the two-dimensional q-state Potts model".

As international seminars

Oct 2022   **Barcelona, Spain**, *Seminari FMC*, **(invited)**, "The yielding transition of amorphous solids".

Dec 2021   **Grenoble, France**, *Laboratoire International de Physique, PSM group seminars*, **visit**, "The yielding of amorphous solids at finite temperatures".

Jan 2021   **Amsterdam, Netherlands (virtual)**, *Computational Soft Matter Seminar, University of Amsterdam.*, **workshop**, "Avalanche statistics and criticality at the yielding transition of amorphous solids".
(invited)

Nov 2020   **Bristol, UK (virtual)**, *Fluids and Materials seminar, School of Mathematics Research, University of Bristol.*, **workshop**, " Avalanche statistics and criticality at the yielding transition of amorphous solids".
(invited)

Oct 2019   **Grenoble, France**, *Laboratoire International de Physique, PSM group seminars*, **visit**, "Criticality in elastoplastic models of amorphous solids with stress-dependent yielding rates".

Feb 2019   **Laussane, Switzerland**, *Prof. Wyart's group meeting, École Polytechnique Fédérale de Lausanne*, **visit**, "An overview of universal avalanche statistics at the yielding transition of amorphous solids".

Nov 2017   **Segrate, Italy**, *Dipartimento di Biotecnologie Mediche e Medicina Traslazionale, UNIMI*, **visit**, "Deformation and flow of amorphous solids".

Oct 2017   **Milano, Italy**, *Center for Complexity and Biosystems annual Workshop*, **workshop**, "Deformation and flow of amorphous solids: the case of silica glass nanofibers".

Apr 2017   **Napoli, Italy**, *Department of Physics, University of Naples Federico II*, **visit**, "Criticality and avalanches at the yielding transition of amorphous solids under deformation".

Mar 2017   **Helsinki, Finland**, *CSM Seminar, Aalto University*, **visit**, "Statistics of collective dynamics on driven glassy systems".

Feb 2017   **Varenna, Italy**, *CC&B group retreat*, **group meeting**, "Machine Learning in Statistical Physics".

Nov 2016   **Grenoble, France**, *PSM group Seminars*, **group meeting**, "Non-equilibrium characterization of critical and spinodal points using Short Time Dynamics".

Sep 2016   **Grenoble, France**, *LIPhy Internal Seminar*, **invited**, "Critical avalanche behavior in the deformation of amorphous solids -driving rate dependence and inertial effects-".

May 2016   **Turin, Italy**, *Seminar, ISI Foundation*, **visit**, "Spatio-temporal patterns in ultra-slow domain wall creep dynamics".

Apr 2016   **Leipzig, Germany**, *TKM group meeting, Institut für Theoretische Physik*, **visit**, "Driving Rate Dependence of Avalanche Statistics at the Yielding Transition of Amorphous Solids".

Feb 2016   **Grenoble, France**, *PSM group Seminars*, **group meeting**, "Spatio-temporal patterns in ultra-slow creep dynamics of elastic interfaces in disordered media".

Oct 2015   **Laussane, Switzerland**, *Prof. Wyart's group meeting, École Polytechnique Fédérale de Lausanne*, **visit**, "Avalanches at the yielding transition".

Jun 2015   **Barcelona, Spain**, *CondMatSem, Departament Física Fonamenta, Universitat de Barcelona*, **visit**, "Driving rate dependence of avalanche statistics and shapes at the yielding transition".

Mar 2015   **Grenoble, France**, *PSM group Seminars*, **group meeting**, "Discussion about avalanches in amorphous solids".

Mar 2015   **Córdoba, Argentina**, *Seminarios del GTMC, Facultad de Matemática, Astronomìa y Fìsica, Universidad Nacional de Córdoba*, **visit**, "Elastoplastic models of amorphous solids: avalanches and relaxational dynamics".

Mar 2015   **La Plata, Argentina**, *Seminarios del IFLYSIB, Instituto de Física de Líquidos y Sistemas Biológicos, Universidad Nacional de La Plata*, **visit**, "Elastoplastic models of amorphous solids: avalanches and relaxational dynamics".

Feb 2015   **Bariloche, Argentina**, *Seminario de Materia Condensada, Departamento de Materia Condensada, Centro Atómico Bariloche*, **visit**, "Elastoplastic models of amorphous solids: avalanches and relaxational dynamics".

Sep 2014   **Grenoble, France**, *PSM group Seminars*, **group meeting**, "Relaxation in amorphous systems: a timid approach to the understanding of "unexpected" experimental observations, and something beyond".

Feb 2014	**Grenoble, France**, *PSM group Seminars*, **group meeting**, "The heterogeneous many core era has arrived. What do we do now?".
Sep 2013	**Grenoble, France**, *PSM group Seminars*, **group meeting**, "A parallel kinetic Monte Carlo technique for the simulation of Coulomb glasses on Graphics Processing Units".
Apr 2013	**Bariloche, Argentina**, *Seminario BTT, Departamento de Materia Condensada, Centro Atómico Bariloche*, **lab seminar**, "Relaxation at the depinning transition of an elastic interface via large scale GPU simulations".
Nov 2012	**Barcelona, Spain**, *CondMatSem, Departament Física Fonamenta, Universitat de Barcelona*, **visit**, "Relaxation at the depinning transition of an elastic interface via large scale GPU simulations".
Nov 2012	**Grenoble, France**, *Séminaire du PSM, Physique Statistique et Modélisation, Laboratoire interdisciplinaire de Physique, Université Joseph Fourier*, **visit**, "Non-steady relaxation and critical exponents at the depinning transition via large scale GPU simulations".
Nov 2012	**Orsay, France**, *Séminaire du LPTMS, Laboratoire de Physique Théorique et Modéles Statistiques, Université Paris Sud*, **lab seminar**, "Non-steady relaxation and critical exponents at the depinning transition via large scale GPU simulations".

At national conferences/workshop/schools

May 2021	**Córdoba, Argentina (virtual)**, *XVIII Taller Regional de Física Estadística y Aplicaciones a la Materia Condensada, (TREFEMAC 2021)*, **workshop**, "An overview of the yielding transition of amorphous solids". (contributed talk)
Sep 2020	**Córdoba, Argentina (virtual)**, *105º Reunión de la Asociación Física Argentina, (RAFA 2020)*, **conference**, "Plastic deformation of amorphous solids: critical aspects of the yielding transition". (Soft Matter Division talk)
Apr 2019	**San Luis, Argentina**, *XVII Taller Regional de Física Estadística y Aplicaciones a la Materia Condensada, (TREFEMAC 2019)*, **workshop**, "Criticality and avalanches at the yielding transition of amorphous solids". (invited speaker)
May 2011	**Córdoba, Argentina**, *First Argentinian School in GPGPU Computing for Scientific Applications*, **lecture**, "GPGPU applications of Monte Carlo in spin models".
Sep 2010	**Malargüe, Argentina**, *95a National Physics Meeting (RNF)*, **conference**, "Dynamics of the ferromagnetic q-state Potts model".
May 2007	**San Rafael, Argentina**, *V Regional Workshop on Statistical Physics and Condensed Matter Applications (TREFEMAC)*, **conference**, "Long term ordering dynamics of the q-state Potts model".

As national seminars

Dec 2019	**Córdoba, Argentina**, *Facultad de Matemática, Astronomía y Física. UNC*, **visit**, "Deformación plástica de sólidos amorfos aspectos críticos de la transición de fluencia".
Ago 2018	**Bariloche, Argentina**, *Condensed Matter Theory Department Seminar*, **visit**, "Transición de 'yielding' en sólidos amorfos: fenomenología y estadística de avalanchas".
Mar 2013	**Bariloche, Argentina**, *Solid State Theory Group Journal*, **group journal club**, "Impact-activated solidification of dense suspensions via dynamic jamming fronts".
Aug 2011	**Córdoba, Argentina**, *FaMAF GPGPU Computing group seminars*, **video conf.**, "GPU Implementation of a Long-Range Phi4 Model with Pseudo-Spectral Techniques using CUFFT".
Aug 2011	**Bariloche, Argentina**, *Solid State Theory Group Journal*, **group journal club**, "Simulations in GPUs: What? Why? How?".

Mar 2011   **Córdoba, Argentina**, *Universidad Nacional de Córdoba*, **PhD thesis defense**, "Relaxational dynamics of the q-state bidimensional Potts model: a contribution to the description of first order phase transitions non-equilibrium properties".

Mar 2011   **Córdoba, Argentina**, *Universidad Nacional de Córdoba*, **Phd Seminar**, "Domain wall dynamics in disordered media".

Nov 2010   **Córdoba, Argentina**, *Universidad Nacional de Córdoba*, **Phd Seminar**, "JAMMING: a new aspirant to the phase transitions club".

Jun 2010   **Córdoba, Argentina**, *GTMC group Seminars*, **group meeting**, "From games to science: the future of numerical simulations using GPUs".

Jun 2009   **Córdoba, Argentina**, *GTMC group Seminars*, **group meeting**, "Short-time dynamics and non-equilibrium criticality".

Posters

At international congress/schools/workshops

March 2021   **USA (virtual)**, *APS March Meeting*, **conference**, "Properties of the density of shear transformations in driven amorphous solids (Abstract: M71.00198)".

July 2016   **Lyon, France**, *STATPHYS26*, "Driving Rate Dependence of Avalanche Statistics and Shapes at the Yielding Transition".
(presented by co-author)

July 2016   **Lyon, France**, *STATPHYS26*, "Effective thermodynamics for a driven athermal system with dry friction".
(presented by co-author)

June 2016   **Lyon, France**, *CECAM Workshop: The flow of amorphous solids, from atomistic simulations to Earth Science applications*, "A display of GPU implementations in Condensed Matter Physics: four distinctive cases".

June 2016   **Lyon, France**, *CECAM Workshop: The flow of amorphous solids, from atomistic simulations to Earth Science applications*, "Driving rate dependence of avalanche statistics and shapes at the yielding transition".
(presented by co-author)

Jul 2015   **Barcelona, Spain**, *Programming and Tuning Massively Parallel Systems summer school (PUMPS)*, "A display of GPU implementations in Condensed Matter Physics: four distinctive cases".
Best poster award

Nov 2014   **Santa Barbara, USA**, *Avalanches, Intermittency, and Nonlinear Response in Far-From-Equilibrium Solids*, "Relaxation in yield stress systems through elastically interacting activated events".

Apr 2014   **Carry-le-Rouet, France**, *42e Congrès National d'Analyse Numérique (CANUM2014)*, "Stationary dynamics of tracer particles in an elasto-plastic model for the structural relaxation of amorphous solids ".

Sep 2013   **Sant Feliu de Guíxols, Barcelona, Spain**, *15th International Conference on Transport in Interacting Disordered Systems (TIDS15)*, "Parallel kinetic Monte Carlo simulation of Coulomb glasses on Graphics Processing Units".
(presented by co-author)

Jul 2013   **Mendoza, Argentina**, *VI Latin American Symposium on High Performance Computing HPCLatAm 2013*, "Modeling stripe domain patterns in magnetic thin films with GPGPU computing".
(presented by co-author)

Jul 2013   **Barcelona, Spain**, *7th. International Discussion Meeting on Relaxation in Complex Systems*, "Non-steady relaxation and critical exponents at the depinning transition".

Sep 2012 **Mainz, Germany**, *Workshop: Statistical Mechanics: Interplay of Theory and Computer Simulations*, "q-state Potts model metastability study using optimized GPU-based Monte Carlo algorithms".

Dec 2011 **Santiago, Chile**, *Summer School and Workshop "Fluctuations and Nonequilibrium Systems 2011"*, "Dynamical heterogeneities in the q-states Potts model".

Oct 2011 **San Luis Potosi, Mexico**, *XII LAWNP (Latin-American Workshop on Nonlinear Phenomena)*, "Dynamical heterogeneities in the q-states Potts model".
(presented by co-author)

Aug 2009 **Leuven, Belgium**, *International Summer School: "Fundamental Problems in Statistical Physics XII"*, "Non-equilibrium Characterization of Spinodal Points using Short Time Dynamics".

Dec 2008 **San Carlos de Bariloche, Argentina**, *SFI Complex Systems Summer School: "Foundations and Frontiers of Complex Systems"*, "Network effects on game dynamics".

Feb 2007 **Bento Goncalves, Brasil**, *2nd Latin American School and conference in Statistical Physics and Interdisciplinary Applications*, "Relaxational dynamics of the q-state Potts model".

Dec 2006 **Mar del Plata, Argentina**, *PASI Summer School "Disorder and Complexity"*, "Relaxational dynamics of the q-state Potts model".

Oct 2005 **San Carlos de Bariloche, Argentina**, *IX LAWNP (Latin-American Workshop on Nonlinear Phenomena)*, "Nucleation in the q-states Potts model".

At national congress/schools/workshops

Apr 2019 **San Luis, Argentina**, *XVII Taller Regional de Física Estadística y Aplicaciones a la Materia Condensada, (TREFEMAC 2019)*, "Inertia and Universality of Avalanche Statistics: The Case of Slowly Deformed Amorphous Solids" "Damage Accumulation in Silica Glass Nanofibers" "Spatiotemporal Patterns in Ultraslow Domain Wall Creep Dynamics" "Creep Dynamics of Athermal Amorphous Materials: A Mesoscopic Approach" , (4 posters).

Sep 2013 **Bariloche, Argentina**, *98a RNF*, "A Kinetic Monte Carlo massively parallel technique for simulation of Coulomb glasses on GPUs".
(presented by co-author)

May 2012 **La Falda, Argentina**, *X TREFEMAC*, "A Phi4 model implementation in GPUs: magnetic pattern study at large scale" "Universal relaxation far from equilibrium of an elastic interface in a disordered media" "Dynamical heterogeneities in the q-state Potts model" , (3 posters).

Sep 2010 **Malargüe, Argentina**, *95a RNF*, "Short time Dynamics in finite size mean field systems".

May 2010 **Mar del Plata, Argentina**, *VIII TREFEMAC*, "q-state Potts model simulations in GPUs" "STD in a fully connected Ising model under Glauber dynamics" , (2 posters).

Sep 2009 **Rosario, Argentina**, *94a RNF*, "Caracterización de no-equilibrio de puntos spinodales usando Dinámica de Tiempos Cortos".
(presented by co-author)

May 2009 **Santa Rosa, Argentina**, *VII TREFEMAC*, "Phase diagram and dynamical properties of a domain wall in a 2D system with perpendicular anisotropy".

May 2008 **San Carlos de Bariloche, Argentina**, *VI TREFEMAC*, "Spinodal temperature in the q-state Potts model" "Domain wall dynamics under AC field in a bi-dimensional disordered media" , (2 posters).

Nov 2007 **Huerta Grande, Argentina**, *Sólidos 2007*, "Domain wall movement on a 2D lattice with random local anisotropy".

Sep 2007 **Ciudad de Salta, Argentina**, *92a RNF*, "Domain wall dynamics on a bi-dimensional lattice with random anisotropy".

Apr 2007 **La Falda, Argentina**, *SMETIB 2007*, "Relaxational dynamics of the q-state Potts model".

Sep 2006	**Ciudad de Merlo, Argentina**, *91a RNF*, "Anomalous coarsening at low temperatures in the q-state Potts model".
May 2006	**Bahía Blanca, Argentina**, *IV TREFEMAC*, "Slow dynamics in the q-state Potts model".
Sep 2005	**La Plata, Argentina**, *90a RNF*, "Nucleation in the q-state Potts model".

Editorial activity / Actividad editorial

since 2018	**Managing Editor**, *Papers in Physics*.
link	**Referee**, *see Publons record*.
since 2021	**Referee**, *for Nature Research publishing*, Communications Physics, regular articles.
since 2020	**Referee**, *for The National Academy of Sciences*, PNAS, regular articles.
since 2019	**Referee**, *for The American Chemical Society*, Macromolecules, regular articles.
since 2018	**Referee**, *for The Royal Chemical Society*, Soft Matter, regular articles.
since 2017	**Referee**, *for The American Physical Society*, Physical Review Letters, Physical Review B, Physical Review E, regular articles.
since 2015	**Referee**, *for Springer*, Cluster Computing (CLUS), regular articles.
since 2015	**Referee**, *for Elsevier*, Computer Physics Communications (CPC), regular articles.
2015	**Evaluator**, *Asocicación Física Argentina*, Giambiagi Prize 2015.
2014	**Referee**, *Cluster Computing*, HPCLatAm14 proceedings.
2012	**Referee**, *Cluster Computing*, HPCLatAm12 proceedings.

Evaluation activity / Actividad de evaluación

Feb 2023	**Project Evaluator**, *Swiss National Science Foundation*, Projects MINT.
Jan 2023	**Thesis Evaluator**, *Pontifica Universidad Católica de Chile*, Physics PhD candidate: Carlos Villaroel, Amorphous Materials under Stresses: Understanding critical behavior.
2020-2023	**Thesis Comitee**, *Pontifica Universidad Católica de Chile*, Physics PhD candidate: Carlos Villaroel.
Dec 2022	**Thesis Evaluator**, *Instituto Balseiro. Universidad Nacional de Cuyo*, Master in Physics Thesis: Zagarra Saez, Renzo, Simulaciones masivamente paralelas de modelos de propagación de epidemias e incendios.
Dec 2018	**Thesis Evaluator**, *Instituto Balseiro. Universidad Nacional de Cuyo*, Master in Physics Thesis: PUIG, Joaquín Roberto, Termodinámica, estructura y magnetismo de nanocristales de vórtices.
2012	**Project Evaluator**, *Universidad Nacional de San Luis*, Topics, advisors and project for a PhD Thesis in Computational Sciences.

PI founded projects / Proyectos como Investigador Principal

2022-2025	**Director of postdoctoral fellowship**, *CONICET (Argentinean National Research Council)*, Argentina, Postdoc: Mubeena Shaikh. "Brittle and ductile behaviors of glasses at the onset of yielding: residual stresses and shear banding".
2021-2024	**PIP2020**, *Argentinean National Research Council - CONICET*, Argentina, Statistical Physics of Amorphous Materials. Dir: E.E. Ferrero and E.A. Jagla. Active. Founded AR$552500
2021-2024	**Director of postdoctoral fellowship**, *CONICET (Argentinean National Research Council)*, Argentina, Postdoc: Gieberth Rodrígues-López. "Avalanches, memory and precursors of catastrophic events in the plastic deformation of amorphous solids".
2018-2020	**PICT2017**, *National Agency for Science and Technology Promotion - ANPCyT*, Argentina, Plastic Deformation of Amorphous Solids. Dir: E.E. Ferrero. Founded AR$210000

Active writing of founding projects / Redacción de proyectos

2019 **International Research Projet (IRP): Bariloche, Bahía Blanca, Grenoble, Paris**, *CNRS*, France, Statistical Physics of Materials. Dir: V. Lecomte and A.B. Kolton.
Granted for 2021-2025

2016 **ECOS-SUD call for collaboration projects**, *COFECUB ECOS-SUD Université Paris 13*, France, Avalanches and Fluctuations in the Plastic Deformation of Solids. Dir: J.-L. Barrat and E.A. Jagla.
Granted for 2017-2019

2014 **GENCI call for TGCC computing hours**, *GENCI (Grand Équipement National de Calcul Intensif)*, France, Large scale simulations of plasticity and avalanches in amorphous systems: a mesoscopic approach. Dir: J.-L. Barrat.
Granted: 40000 computing hours

2012 **SNCAD Economic support for workshops and courses**, *SNCAD (Sistema Nacional de Computación de Alto Desempeño)*, Argentina, Introduction to Numerical Calculus in Graphics Processors (ICNPG 2013). Dir: F. Colavecchia.
Granted: founding for two visiting teachers and 15 student fellowships

2011 **NVIDIA Academic Partnership**, *NVIDIA corporation*, USA, Condensed Matter implementations in GPUs. Dir: D. Domínguez.
Granted: 2 Fermi GPUs

Further academy-related activities / Otras actividades

Government

2022–present Member of the Nanoscience and Nanotechnology Institute (INN-CNEA-CONICET) Rules Committee

2021–2022 Member of the Nanoscience and Nanotechnology Institute (INN-CNEA-CONICET) Council Board (Bariloche node)

2008–2011 Member of the Córdoba Subsidiary of the Argentinean Physics Association Board of Directors

2008–2010 Councilor in the Board of Governors of FaMAF (graduate senate)

2001–2002, 2002–2003 Councilor in the Board of Governors of FaMAF (student senate)

Membership

since 2002 Member of the Argentinean Physics Association

2009-2013 Member of the GPGPU Computing Group – FaMAF

Assistance

2007 Collaborator at XII Ibero-American Physics Olympiad

2006, 2010, 2011 Collaborator at Argentinean Physics Olympiads

Scientific interests / Intereses científicos

- ○ Phase Transitions and Critical Phenomena.
- ○ Non-equilibrium Statistical Physics.
- ○ Magnetic Systems. Complex systems. Disordered Elastic Systems.
- ○ Amorphous Solids. Soft Matter. Metamaterials.
- ○ Glasses. Granular Systems. Gels.
- ○ Active Matter. Biophysics.
- ○ Computational Physics. GPU Computing.
- ○ Machine Learning.

Languages / Idiomas

Fluid	Spanish, English, French
Average	Italian
Basic	Portuguese
Learning	Catalan

Computer skills / Conocimientos en programación

OS	Linux/Unix
Programming	C/C++, C for CUDA, Fortran, Python
Utils	bash, awk, sed
Graphics	Grace, Gnuplot
Sci Soft	LAMMPS
Libraries	RNGs, FFT, Thrust, CUB
DRMs	SGE, OAR, SLURM
Version CS	GIT, SVN
Documents	LaTeX, Libre Office

Public codes

Code repo	https://bitbucket.org/ezeferrero

Notice: This file contains hyperlinks / Este documento contiene enlaces web.

Last updated November 15, 2023.