

CURRICULUM VITAE

Name: **JAGLA, Eduardo Alberto**

Date of Birth: April 21, 1967

Place of Birth: Buenos Aires, Argentina

Nationality: Argentine

University Studies

-Physics at the University of Buenos Aires (1987-1989)

-Physics at the Instituto Balseiro, Universidad Nacional de Cuyo (1989-1992). Degree: Licenciado en Física, average qualification 9.71 (out of 10)

- Doctor in Physics at the Instituto Balseiro, Universidad Nacional de Cuyo (1996)

Languages

Spanish, English, Italian

Scholarships, Fellowships

-Comisión Nacional de Energía Atómica (CNEA, Argentina, 1989-1992)

-National Council of Scientific and Technological Research (CONICET, Argentina): from 1993 to 1998.

-ICTP post-doctoral fellowship: 1998-1999

-ICTP-Junior Associate, 2001-2002

-ICTP Research Scientist, 2003-2004

-Fellow of the National Council of Scientific and Technological Research (CONICET, Argentina) 2000-. Present category: Independent

Conferences, Meetings, Workshops:

-M2S- HTSC IV, Grenoble, France, July 5-9 1994: 'Wohllleben effect in a model granular high TC superconductor'

-Miniworkshop on Josephson Junction Arrays, Trieste Italy, August 7-11, 1995: 'Percolation phase transition in the 3D JJA model'

-March Meeting of the APS, Kansas City, March 17-21, 1997, 'Mechanisms for c-axis dissipation of the vortex structure in highly anisotropic superconductors' (oral)

-Adriatico Research Conference on 'Wetting', Trieste, Italy, June 15-18 (1999) 'Surface Melting induced Pre-roughening'(oral)

-INFM annual meeting, Bari, Italy, June 2002: 'Boundary lubrication properties of materials with expansive freezing'(oral)

-1st Latin-American Conference on 'Statistical Physics and Interdisciplinary Applications', La Habana, Cuba, March 10-12, 2005: 'Crack Patterns and Energy Minimization' (invited talk)

- Sólidos 05, Bariloche, Argentina, November 1-5, 2005, 'Patrones de magnetización en sistemas quasi-bidimensionales con anisotropía perpendicular' (invited talk).
- XIX Latin American Symposium on Solid State Physics (SLAFES XIX), Iguazú, Argentina, Octubre 5-10, 2008, "Generic mechanism for the shear banding phenomenon in amorphous materials" (invited talk)
- Joint ICTP/FANAS Conference on Trends in Nanotribology, ICTP, Trieste, Italy, October 2009 (invited talk)
- Advanced School on Non-linear Dynamics and Earthquake Prediction, ICTP, Trieste, Italy, October 2009 (two lectures, by invitation)
- TREFEMAC 9, Merlo, San Luis (Arg.), May 4-6, 2011 "Modelado estadístico de secuencias de terremotos. Historia y avances recientes" (invited talk)
- XIII Latin american Workshop on Nonlinear Phenomena, Villa Carlot Paz, Córdoba, Argentina, 21-25/10/2013 "A visco-elastic interface driven on a disordered landscape: modeling earthquake dynamics and friction phenomena" (oral, contributed)

Publications (citations according to Scopus: over 1200, h index: 21)

- 70- E. A. Jagla
Viscoelastic effects in avalanche dynamics: A key to earthquake statistics
E. A. Jagla, F. Landes, and A. Rosso
Phys. Rev Lett. **112**, 174301 (2014)
- 69- E. A. Jagla
Creep dynamics of viscoelastic interfaces
Europhys. Lett. **105**, 46003 (2014)
- 68- L. E. Aragón and E. A. Jagla
Spatial and temporal forecasting of large earthquakes in a spring-block model of a fault
Geophys. J. Int. **195**, 1763 (2013)
- 67- E. A. Jagla
Forest fire analogy to explain the b-value of the Gutenberg-Richter law for earthquakes
Phys. Rev Lett. **111**, 238501 (2013)
- 66- E. A. Jagla
Velocity weakening and possibility of aftershocks in nanoscale friction experiments
Phys. Rev E **86**, 155408 (2012)
- 65 F. Landes, A. Rosso, and E. A. Jagla
Tuning spreading and avalanche-size exponents in directed percolation with modified activation probabilities
Phys. Rev E **86**, 041150 (2012)

- 64-T. M Guozden y E. A. Jagla
Fatigue crack propagation in a quasi-one-dimensional elasto-plastic model
Int. J. Sol. Struct. Volume **49**, 3224 (2012)
- 63-L. E. Aragón, E.A. Jagla, and A. Rosso
Seismic cycles, size of the largest events, and the avalanche size distribution in a model of seismicity
Phys. Rev. E **85**, 046112 (2012)
- 62-M.F. Laguna and E. A. Jagla
Martensitic transformations using a two-body isotropic potential:
Strain-stress simulations and superelasticity in monocrystals
Solid State Phenomena **172-174**, pp 73-78 (2011)
- 61-Jagla E.A.
Creep rupture of materials: Insights from a fiber bundle model with relaxation
Phys. Rev. E **83**, 046119 (2011)
- 60-Jagla E.A.
Delayed dynamic triggering of earthquakes: Evidences from a statistical model of seismicity
Europhys. Lett. **93**, 19001 (2011).
- 59-Jagla E.A.
Shear band dynamics from a mesoscopic modeling of plasticity.
J. Stat. Mech. P12025 (2010).
- 58-Jagla E.A.
Towards a modeling of the time dependence of the contact area between solid bodies
J. Stat. Mech. P06006 (2010).
- 57-Jagla EA, Kolton AB
A mechanism for spatial and temporal earthquake clustering
J. Geophys. Res. **115**, B05312 (2010).
- 56-Jagla, E. A.
Realistic spatial and temporal earthquake distributions in a modified Olami-Feder-Christensen model
Phys. Rev. E **81** 046117 (2010).
- 55-T.M.Guozden, E.A.Jagla, and M.Marder
Supersonic cracks in lattice models
Int. J. Fract. **162** 107 (2010).
- 54-Laguna, M. F., Jagla, E. A.
Classical isotropic two body potential generating martensitic transformations.
J. Stat. Mech P09002 (2009).
- 53-Jagla, E. A.
Finite width of quasi-static shear bands
Phys. Rev. E **78**, 026105 (2008)

- 52-Laguna, M.F., Bohn, S., Jagla, E. A.
The role of elastic stresses on leaf venation morphogenesis
PloS Comput. Biol. 4(4): e1000055 (2008)
- 51-Jagla EA
Strain Localization driven by structural relaxation in sheared amorphous solids
Phys. Rev. E **76**, 046119 (2007).
- 50-Pierce, M. S. et al.
Disorder-induced magnetic memory: Experiments and theories
Phys. Rev. B **75**, 144406 (2007).
- 49-Jagla, EA
Simulating the buckling and delamination of thin films
Phys. Rev. B **75**, 085405 (2007).
- 48 Jagla EA
Morphologies of expansion ridges of elastic thin films onto a substrate
Phys. Rev. E **74**, 036207 (2006).
- 47-Guozden T, Jagla EA
Some analytical results for the velocity of cracks propagating in nonlinear lattices
Phys. Rev. E **74**, 016106 (2006).
- 46-Bustingorry S, Jagla EA, Domínguez D
Molecular dynamics simulation of shear in a pressure-induced amorphous model system
J. non-Cryst. Sol. **352**, 2074 (2006).
- 45-Guozden T, Jagla EA
Supersonic crack propagation in a class of lattice models of Mode III brittle fracture
Phys. Rev. Lett., **95**, 224302 (2005).
- 44-Bustingorry S, Jagla EA, Lorenzana J.
Thermodynamics of volume collapse transitions in cerium and related compounds
Acta Materialia, **53**, 5183 (2005).
- 43-Jagla EA
Hysteresis loops of Magnetic Thin Films with Perpendicular Anisotropy
Phys. Rev. B **72**, 094406 (2005) .
- 42-Bustingorry S, Jagla EA
Pressure Induced Amorphisation, Crystal-crystal Transformations and the Memory Glass Effect
Phys. Rev. B **71**, 224119 (2005) .
- 41-Marconi VI, Jagla EA
Diffuse Interface Approach to Brittle Fracture
Phys. Rev. E **71**, 036110 (2005).
- 40- M. S. Pierce *et al.*
Disorder Induced Microscopic Magnetic Memory

Phys. Rev. Lett. **94**, 017202 (2005).

39-Jagla EA

Numerical simulations of two dimensional magnetic domain patterns
Phys. Rev E **70**, 046204 (2004).

38-Jagla EA

The buckling transition of two-dimensional elastic honeycombs: Numerical simulations and Landau theory
J. Phys.: Condens. Matter **16**, 4419 (2004).

37-Jagla EA

Maturation of crack patterns
Phys. Rev. E **69**, 056212 (2004).

36-Bustingorry S, Jagla EA

Mechanical versus thermodynamical melting in pressure-induced amorphization: The role of defects
Phys. Rev. B **69**, 064110 (2004).

35-Jagla EA

The interpretation of the water anomalies in terms of core-softened models
Braz. J. Phys. **34**, 17 (2004).

34-Saliba R, Jagla EA

Analysis of columnar joint patterns from three-dimensional stress modelling
J. Geophys. Res. **108** 2476 (2003).

33-Jagla EA

Boundary lubrication properties of materials with expansive freezing
Phys. Rev. Lett. **88** 245504 (2002).

32-Jagla EA

Stable propagation of an ordered array of cracks during directional drying
Phys. Rev. E **65** 046147 (2002).

31-Jagla EA, Rojo AG

Sequential fragmentation: The origin of columnar quasihexagonal patterns
Phys. Rev. E **65** 026203 (2002).

30-Jagla EA, Tosatti E

Structure and evolution of a metallic nanowire-tip junction
Phys. Rev. B **64** 205412 (2001).

29-Jagla EA

Liquid-liquid equilibrium for monodisperse spherical particles
Phys. Rev. E **63** 061501 (2001).

28-Jagla EA

Low-temperature behavior of core-softened models: Water and silica behavior
Phys. Rev. E **63** 061509 (2001).

27-Jagla EA

Comment on "First-order amorphous-amorphous transformation in silica"

Phys. Rev. Lett. **86** 3206 (2001).

26-Jagla EA

Fragile-strong transitions and polyamorphism in glass forming fluids

Mol. Phys. **99** 753 (2001).

25-Jagla EA, Tosatti E

Interplay of surface preroughening, roughening, and melting in three-dimensional lattice models

Phys. Rev. B **62** 16146 (2000).

24-Jagla EA, Tosatti E

Shape changes in glasses due to surface flow

Surf. Sci. **464** L686 (2000).

23-Jagla EA, Tosatti E

Surface defreezing of glasses

Europhys. Lett **51** 648 (2000).

22-Jagla EA, Prestipino S, Tosatti E

Phase transitions at the early stages of surface melting

Surf. Sci. **454** 608 (2000).

21-Prestipino S, Jagla EA, Tosatti E

Can one have preroughening of vicinal surfaces?

Surf. Sci. **454** 652 (2000).

20-Jagla EA

A model for the fragile-to-strong transition in water

J. Phys. Condens. Matter **11** 10251 (1999).

19-Jagla EA

Core-softened potentials and the anomalous properties of water

J. Chem. Phys. **111** 8980 (1999).

18-Jagla EA, Prestipino S, Tosatti E

Surface-melting-induced preroughening

Phys. Rev. Lett. **83** 2753 (1999).

17-Jagla EA

Minimum energy configurations of repelling particles in two dimensions

J. Chem. Phys. **110** 451 (1999).

16-Jagla EA

Melting of hard cubes

Phys. Rev. E **58** 4701 (1998).

15-Jagla EA

Phase behavior of a system of particles with core collapse
Phys. Rev. E **58** 1478 (1998).

14-Laguna MF, Jagla EA, Balseiro CA
Activation energy for vortex motion in anisotropic superconductors
Phys. Rev. B **57** 10884 (1998).

13-Jagla EA
Longitudinal and transverse dissipation in a simple model for the vortex lattice with screening
Phys. Rev. B **57** 5466 (1998).

12-Jagla EA, Balseiro CA
Phase diagram of high-T-c superconductors: Influence of anisotropy and disorder
Phys. Rev. B **55** 3192(1997).

11-Jagla EA, Balseiro CA
Effect of disorder on the vortex-lattice melting transition
Phys. Rev. Lett. **77** 1588 (1996).

10-Jagla EA, Balseiro CA
Vortex structure and resistive transitions in high-T-c superconductors
Phys. Rev. B **53** 15305 (1996).

9-Lopez D, Jagla EA, Righi EF, et al.
Dynamic softening of vortex lines in YBa₂Cu₃O_{7-δ} single crystals
Physica C **260** 211 (1996).

8-Jagla EA, Balseiro CA
Percolation transition of the vortex lattice and c-axis resistivity in high-temperature superconductors
Phys. Rev. B **53** R538 (1996).

7-Jagla EA, Balseiro CA
Transport-properties of a 3-dimensional array of Josephson-junctions in a magnetic-field
Phys. Rev. B **52** 4494 (1995).

6-Jagla EA, Balseiro CA
Persistent currents in a superconducting ring with a normal and spin-flip junction
Solid State Commun. **93** 119 (1995).

5-Im HK, Jagla EA, Balseiro CA
Proximity effect of thin-films on superconducting substrates
Phys. Rev. B **50** 10117 (1994).

4-Dominguez D, Jagla EA, Balseiro CA
Phenomenological theory of the paramagnetic Meissner effect
Phys. Rev. Lett. **72** 2773 (1994).

3-Jagla EA, Hallberg K, Balseiro CA
Numerical study of charge and spin separation in low-dimensional systems
Phys. Rev. B **47** 5849 (1993).

2-Jagla EA, Balseiro CA
Electron-electron correlations and the Aharonov-Bohm effect in mesoscopic rings
Phys. Rev. Lett. 70 639 (1993).

1-Jagla EA, Dalvit DAR
Null-length springs - some curious properties
Am. J. Phys **59** 434 (1991).

Awards

- Argentinian Physical Association (AFA), 'Mención Honorífica' in the 1997 edition of the JJ Giambiagi prize.

- 'Leo Falicov' Prize in Physics, from the Academia Nacional de Ciencias Exactas, Físicas y Naturales, Argentina (2006).

- Paper: "Delayed dynamic triggering of earthquakes: Evidences from a statistical model of seismicity", Europhys. Lett. **93**, 19001 (2011)
Selected for the collection "Best of 2011", of Europhysics Letters.

- Paper: "Viscoelastic effects in avalanche dynamics: A key to earthquake statistics
E. A. Jagla, F. Landes, and A. Rosso, Phys. Rev. Lett. **112**, 174301 (2014)
Selected as "Editor's Suggestion"

Teaching Experience

- Teaching assistant at the Instituto Balseiro, Universidad Nacional de Cuyo (Argentina) 1992-2002. In charge of the Statistical Mechanics course (2002) and the course on Statistical Methods in Condensed Matter Physics (with Daniel Domínguez, 2000).

- Statistical Mechanics course (with S. Shenoy and M. Marsili) at the Diploma Programme, (ICTP, 2003, 2004)

- Profesor Adjunto, Instituto Balseiro, 2005-.2014

- Profesor Asociado, Instituto Balseiro, 2014-

Supervision of Students

Luis Aragón, PhD student, Instituto Balseiro, (Bariloche, Argentina, starting 2012).

Luis Aragón, Master Thesis, Instituto Balseiro, (Bariloche, Argentina, August 2010-December 2011).

Sebastián Bustingorry, Ph.D., Instituto Balseiro (Bariloche, Argentina, 2006).

Tomás Guozden, Ph.D. Instituto Balseiro (Bariloche, Argentina, 2010).

Director of Fabiana Laguna, as Investigadora Asistente of Conicet (2005-2010)