

Toms S. Grigera — Brief CV

Personal

Contact information	GRIGERA, Tomás Sebastián Instituto de Investigaciones Físicoquímicas Teóricas y Aplicadas (INIFTA) Diagonal 113 esq. 64 c.c. 16, suc. 4 B1904DPI La Plata ARGENTINA e-mail: tgrigera@inifta.unlp.edu.ar
Birth	23-Oct-1969 at La Plata, Argentina
Citizenship	Argentinean

Present positions

Since 1-Nov-05	Associate researcher of Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET). Instituto de Investigaciones Físicoquímicas Teóricas y Aplicadas (INIFTA), CONICET and University of La Plata, Argentina.
Since 16-Dec-08	Assistant Professor. Departamento de Física, Facultad de Ciencias Exactas, Universidad Nacional de La Plata.
2006 – 2011	Regular Associate, The Abdus Salam International Centre for Theoretical Physics (Trieste, Italy).

Research interests

Structural glasses and the glass transition; ageing and high frequency dynamics of glasses; statistical mechanics of systems with slow dynamics; computer simulation of glassy systems.

Education

7-Dec-1993	M.Sc. in Physics. University of La Plata, Argentina.
11-Feb-1998	Ph.D. in Physics. University of La Plata, Argentina.

Research

1-Feb-93 – 30-May-93	Student intern. Centro de Investigación, Fundación para el Desarrollo Tecnológico, Organización Techint, Campana, Argentina
1-Apr-94 – 28-Feb-98	Ph.D. student. Instituto de Investigaciones Físicoquímicas Teóricas y Aplicadas (INIFTA), University of La Plata, Argentina. Advisor: Prof. Dr. Rubén V. Figini.
20-Jan-96 – 31-Mar-96	Visitor. Laboratoire d' Ultrasons et de Dynamique des Fluides Complexes, Université Louis Pasteur, Strasbourg, France.
1-Jul-97 – 31-Ago-97	Visiting Scholar. Department of Physics, Northeastern University, Boston, USA.
1-Mar-98 – 28-Feb-00	Visiting Scholar / postdoctoral fellow. Department of Physics, Northeastern University, Boston, USA.

1-Mar-00 – 30-Sep-03	Postdoctoral fellow. Dipartimento di Fisica, Università di Roma <i>La Sapienza</i> , Rome, Italy.
1-Oct-03 – 31-Mar-04	Postdoctoral fellow of CONICET.
1-Apr-04 – 31-Oct-05	Assistant researcher of CONICET, working at INIFTA, University of La Plata (Argentina).
1-Nov-05 –	Associate researcher CONICET, working at INIFTA, University of La Plata (Argentina).
2006 – 2011	Regular Associate, The Abdus Salam International Centre for Theoretical Physics (Trieste, Italy).
7-Jan-08 – 5-Mar-08	Visiting Professor. Dipartimento di Fisica, Università degli studi di Trento (Italy).

Teaching

1990 – 1998	Held various teaching assistant positions, teaching mathematics and physics at the freshman level at the University of La Plata.
26-Mar-04 – 28-Feb-06	Senior teaching assistant. Sophomore mathematics for engineers. Departamento de Fisicomatemáticas, Facultad de Ingeniería, Universidad Nacional de La Plata.
1-Aug-05 – 15-Dec-08	Assistant Professor (temporary). Freshman physics and statistical mechanics. Departamento de Física, Facultad de Ciencias Exactas, Universidad Nacional de La Plata.
16-Dec-08 –	Assistant Professor. Departamento de Física, Facultad de Ciencias Exactas, Universidad Nacional de La Plata.

Fellowships

1-Mar-91 – 31-Dic-93	Undergraduate studies fellowship. Fundación Bolsa de Comercio de Buenos Aires.
1-Apr-94 – 31-Mar-98	Graduate studies fellowship. Consejo Nacional de Investigaciones Científicas y Técnicas (CONICET), Argentina.
1-May-98 – 30-Apr-99	Postdoctoral fellowship. Fundación Antorchas, Argentina.
1-Apr-99 – 31-Mar-02	Postdoctoral fellowship. CONICET.
1-Mar-00 – 30-Oct-00	Postdoctoral fellowship. Instituto Nazionale di Fisica Nucleare, Italy.

Research grants received (as principal investigator)

November 2002	Grant “Enrico Fermi”. Centro di studi e ricerche “Enrico Fermi”, Roma (Italy). 1 year.
July 2004	Reentry grant. Fundación Antorchas (Argentina). 1 year, renewed for an additional year August 2005.
December 2006	Young researcher grant from Agencia Nacional de Promoción Científica y Tecnológica (Argentina). 2 years.

October 2008

Joint reasearch project within the Science and Technology Cooperation Agreement between Italy and Argentina. MinCyT (Argentina) and MAE (Italy). Italian coordinator: A. Cavagna.

Invited lectures at short schools

1. Dynamics of structural glasses (20 hours). *Escuela IB-CAB de Dinámica fuera del equilibrio en sistemas complejos*, Instituto Balseiro (Bariloche, Argentina), 27 september to 24 october 2004.
2. Introduction to structural glasses (3 hours). *1st Latin American School on Statistical Mechanics of Complex Sytems*, La Habana (Cuba), 28 february to 9 march 2005.
3. Introduction to structural glasses (3 hours). *School on Modelling Elastic Manifolds (from Soft Condensed Matter to Biomolecules)*, The Abdus Salam Centre for Theoretical Physics, Trieste (Italy), 24 and 25 july 2006.

Invited talks at scientific meetings

1. Vibrations in glasses: a Random Matrix approach, *Unifying concepts in glass theory*, Accademia Nazionale dei Lincei, Roma, February 27–March 2, 2002.
2. La transición vítrea y las propiedades geométricas de la hipersuperficie de energía potencial, *II Taller Regional de Física Estadística y sus Aplicaciones a la Materia Condensada*, Córdoba, 27–28 May 2004.
3. Out of equilibrium dynamics of glassy systems. *Workshop on dynamics and relaxation in supercooled fluids and glassy sytems*, Mar del Plata, 26–29 September 2004.
4. Comparison of algorithms to search for saddle points, *1st Latin American Conference on Statistical Mechanics and Interdisciplinary Applications*, La Habana (Cuba), 10–12 March 2005.
5. Mechanical instability of disordered structures and the glass transition, *Conference on Modelling Elastic Manifolds*, ICTP, Trieste (Italy), 26–29 July 2006.
6. Mosaic multi-state vs. one-state description of supercooled liquids, *Second Latin American Conference on Statistical Physics and Interdisciplinary Applications*, Bento Gonçalves (Brasil), 13–15 February 2007.
7. Invited in the role of discussant. *Workshop on dynamical heterogeneities in glasses, colloids and granular media*, Lorentz Center, Leiden (Netherlands), August 25–September 5 2008.
8. Thermodynamics of supercooled liquids: spatial correlations at low temperatures. *Fronteras en fisicoquímica, un enfoque interdisciplinario (conference on occasion of the 60th anniversary of INIFTA)*, La Plata (Argentina), 24–28 November 2008.
9. Surface tension and spinodal limit in supercooled liquids. *International Discussion Meeting on Relaxation in Complex Systems*. Rome (Italy), August 30–September 5 2009.

Publications

- [1] M. V. CERESSETTO, T. S. GRIGERA, B. O'DONNELL, J. SANDOVAL, AND M. GARAVAGLIA, Sobre el criterio de resolución de Rayleigh para fuentes policromáticas. *Anales de la Asociación Física Argentina* **3**, 192 (1991).

- [2] J. R. GRIGERA, T. S. GRIGERA, E. I. HOWARD, AND A. D. PODJARNY, Molecular dynamics simulation of crystal water with x-ray constraints. *Int. J. Quantum Chem.* **21** (1994).
- [3] T. S. GRIGERA AND J. L. ALESSANDRINI, Elastic scattering from diblock copolymer chains in dilute solution. *J. Chem. Phys.* **104**, 6027–6035 (1996).
- [4] S. A. GRIGERA, T. S. GRIGERA, AND J. R. GRIGERA, Random surface deposition of diffusing dimers in two dimensions. *Phys. Lett. A* **226**, 124–126 (1997).
- [5] N. E. ISRAELOFF AND T. S. GRIGERA, Low-frequency dielectric fluctuations near the glass transition. *Europhys. Lett.* **43**, 308–313 (1998).
- [6] T. S. GRIGERA AND N. E. ISRAELOFF, Observation of fluctuation-dissipation-theorem violations in a structural glass. *Phys. Rev. Lett.* **83**, 5038–5041 (1999).
- [7] T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Vibrational spectrum of topologically disordered systems. *Phys. Rev. Lett.* **87**, 085502 (2001).
- [8] T. S. GRIGERA AND G. PARISI, Fast Monte Carlo algorithm for supercooled soft spheres. *Phys. Rev. E* **63**, 045102 (2001).
- [9] S. A. GRIGERA, T. S. GRIGERA, E. F. RIGHI, G. NIEVA, AND F. DE LA CRUZ, Flux-cutting in $\text{YBa}_2\text{Cu}_3\text{O}_{7-\delta}$ revisited. *Physica C* **371**, 237–242 (2002).
- [10] T. S. GRIGERA, A. CAVAGNA, I. GIARDINA, AND G. PARISI, Geometric approach to the dynamic glass transition. *Phys. Rev. Lett.* **88**, 055502 (2002).
- [11] T. S. GRIGERA, I. M. IRURZUN, M. S. CORTIZO, R. V. FIGINI, AND M. MARX-FIGINI, Unified analysis of thermodynamic and rheological properties of high polymer solutions. I. Binary systems. *J. Polym. Sci. B: Polym. Phys.* **40**, 290–301 (2002).
- [12] T. S. GRIGERA AND N. E. ISRAELOFF, Numerical study of ageing in coupled two-level systems. *Philos. Mag. B* **82**, 313–322 (2002).
- [13] T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Vibrational spectra in glasses. *Philos. Mag. B* **82**, 637–649 (2002).
- [14] T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Vibrations in glasses and Euclidean random matrix theory. *J. Phys.: Condens. Matter* **14**, 2167–2179 (2002).
- [15] I. M. IRURZUN, T. S. GRIGERA, M. S. CORTIZO, R. V. FIGINI, AND M. MARX-FIGINI, Unified analysis of thermodynamic and rheological properties of high polymer solutions. II. Ternary systems. *J. Polym. Sci. B: Polym. Phys.* **40**, 1071–1079 (2002).
- [16] A. CAVAGNA, I. GIARDINA, AND T. S. GRIGERA, Glass and polycrystal states in a lattice spin model. *J. Chem. Phys.* **118**, 6974–6988 (2003).
- [17] A. CAVAGNA, I. GIARDINA, AND T. S. GRIGERA, Glassy dynamics, metastability limit and crystal growth in a lattice spin model. *Europhys. Lett.* **61**, 74–80 (2003).
- [18] A. CAVAGNA, I. GIARDINA, AND T. S. GRIGERA, A single saddle model for the α -relaxation in supercooled liquids. *J. Phys. A: Math. Gen.* **36**, 10721–10737 (2003).
- [19] S. CILIBERTI, T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Brillouin and boson peaks in glasses from vector Euclidean random matrix theory. *J. Chem. Phys.* **119**, 8577–8591 (2003).
- [20] T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Phonon interpretation of the ‘boson peak’ in supercooled liquids. *Nature* **422**, 289–292 (2003).

- [21] S. CILIBERTI AND T. S. GRIGERA, Localization threshold of instantaneous normal modes from level-spacing statistics. *Phys. Rev. E* **70**, 061502 (2004).
- [22] T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Asymptotic aging in structural glasses. *Phys. Rev. B* **70**, 014202 (2004).
- [23] S. CILIBERTI, T. S. GRIGERA, V. MARTÍN-MAYOR, G. PARISI, AND P. VERROCCHIO, Anderson localization in euclidean random matrices. *Phys. Rev. B* **71**, 153104 (2005).
- [24] T. S. GRIGERA, Geometrical properties of the potential energy of the soft-sphere binary mixture. *J. Chem. Phys.* **124**, 064502 (2006).
- [25] A. CAVAGNA, T. S. GRIGERA, AND P. VERROCCHIO, Mosaic multistate scenario versus one-state description of supercooled liquids. *Phys. Rev. Lett.* **98**, 187801 (2007).
- [26] G. BIROLI, J.-P. BOUCHAUD, A. CAVAGNA, T. S. GRIGERA, AND P. VERROCCHIO, Thermodynamic signature of growing amorphous order in glass-forming liquids. *Nature Phys.* **4**, 771–775 (2008).
- [27] C. CAMMAROTA, A. CAVAGNA, G. GRADENIGO, T. S. GRIGERA, AND P. VERROCCHIO, Evidence for a spinodal limit of amorphous excitations in glassy systems. *J. Stat. Mech.* **2009**, L12002 (2009).
- [28] C. CAMMAROTA, A. CAVAGNA, G. GRADENIGO, T. S. GRIGERA, AND P. VERROCCHIO, Numerical determination of the exponents controlling the relationship between time, length, and temperature in glass-forming liquids. *J. Chem. Phys.* **131**, 194901 (2009).
- [29] E. S. LOSCAR, E. E. FERRERO, T. S. GRIGERA, AND S. A. CANNAS, Nonequilibrium characterization of spinodal points using short time dynamics. *J. Chem. Phys.* **131**, 024120 (2009).

La Plata, April 23, 2010