Ilaria Paga | Curriculum Vitae

ilaria.paga@uniroma1.it

Education

Ph.D in Theoretical Physics **2017-current**
Universitá degli Studi di Roma La Sapienza and Universidad Complutense de Madrid

Masters degree in Theoretical Physics **2015-2017**
Universitá degli Studi di Roma La Sapienza, Final grade: 110/110 cum Laude *Rome, Italy*

Bachelor degree in Physics **2011–2014**
Universitá degli Studi di Roma La Sapienza *Rome, Italy*
Final grade: 109/110

Classic high school diploma **2006–2011**
Liceo Classico Statale "Terenzio Mamiani" *Rome, Italy*
Final grade: 95/100

Ph.D. Thesis

Title: *From glassy bulk systems to films: simulations meet experiment*

Supervisor: Professor Enzo Marinari and Victor Martin-Mayor

Description: Motivated by recent experiments of exceptional accuracy, we study numerically the spin-glass dynamics in a film geometry. We cover all the relevant time regimes, from picoseconds to equilibrium, at temperatures at and below the 3D critical point. The dimensional crossover from 3D to 2D dynamics, that starts when the correlation length becomes comparable to the film thickness, consists of four dynamical regimes. [1]. The synergy between experiment, theory, and simulations enables a microscopic analysis of spin glass dynamics in a magnetic field in the vicinity and below the spin glass transition temperature T_g . The spin glass correlation length, $\xi(t,,T)$, is extracted both from experiment and simulations, with the *waiting time* after the spin glass has been cooled to below T_g , and the measurement temperature stabilized at T, and the origin of the time t is taken at the instant that the magnetic field is changed. Known analysis methods lead to discrepancies either for large external fields or close to the glass temperature. We solve this problem by introducing a scaling law that takes into account both the magnetic field and the time-dependent spin-glass correlation length [2, 3]

Master Thesis

Title: *Simulation of a thin glassy film*

Supervisor: Professor Enzo Marinari

Description: I studied the equilibrium properties of a thin glassy film at the $3D$ critical temperature.

Bachelor Thesis

Title: *Theory of the magneto-hydrodynamics for the fluid description of a plasma*

Supervisor: Professor Giovanni Montani

Description: I studied a plasma system though the magneto-hydrodynamics approximation.

Computer skills

Programming: Mathematica, Python, C, Bash, Matlab

Other software: LaTeX, Office

O.S.: Linux

Publications

L. A. Fernandez, E. Marinari, V. Martin-Mayor, I. Paga, and J. J. Ruiz-Lorenzo. Dimensional crossover in the aging dynamics of spin glasses in a film geometry. *Phys. Rev. B*, 100:184412, Nov 2019.

Q. Zhai, I. Paga, M. Baity-Jesi, E. Calore, A. Cruz, L. A. Fernandez, J. M. Gil-Narvion, I. Gonzalez-Adalid Pemartin, A. Gordillo-Guerrero, D. Iñiguez, A. Maiorano, E. Marinari, V. Martin-Mayor, J. Moreno-Gordo, A. Muñoz Sudupe, D. Navarro, R. L. Orbach, G. Parisi, S. Perez-Gaviro, F. Ricci-Tersenghi, J. J. Ruiz-Lorenzo, S. F. Schifano, D. L. Schlagel, B. Seoane, A. Tarancon, R. Tripiccione, and D. Yllanes. Scaling law describes the spin-glass response in theory, experiments, and simulations. *Phys. Rev. Lett.*, 125:237202, Nov 2020.

I Paga, Q Zhai, M Baity-Jesi, E Calore, A Cruz, L A Fernandez, J M Gil-Narvion, I Gonzalez-Adalid Pemartin, A Gordillo-Guerrero, D Iñiguez, A Maiorano, E Marinari, V Martin-Mayor, J Moreno-Gordo, A Muñoz-Sudupe, D Navarro, R L Orbach, G Parisi, S Perez-Gaviro, F Ricci-Tersenghi, J J Ruiz-Lorenzo, S F Schifano, D L Schlagel, B Seoane, A Tarancon, R Tripiccione, and D Yllanes. Spin-glass dynamics in the presence of a magnetic field: exploration of microscopic properties. *Journal of Statistical Mechanics: Theory and Experiment*, 2021(3):033301, mar 2021.