

## Publication list

Giacomo Gradenigo

I published 21 papers on peer reviewed international journals (**H-index 11 ISI**), among which 4 papers on Phys. Rev. Lett., 3 proceedings of conferences, and a chapter of the book “Nonequilibrium Statistical Physics of Small Systems: Fluctuation Relations and Beyond” (Wiley-VCH, Weinheim, 2013) R. Klages, W. Just, C. Jarzynski (Eds.). I am also referee for three international journals (listed below). I have 1 paper under referral on PRE and 3 more paper in preparation.

## Published papers divided by subject

### Granular fluids and out-of-equilibrium systems

[1] “Edwards thermodynamics for a driven athermal system with dry friction”

G. Gradenigo, E. E. Ferrero, E. Bertin, J.-L. Barrat,  
Phys. Rev. Lett. 115, 140601 (2015).

[2] “Fluctuation relations without uniform large deviations ”,

G. Gradenigo, A. Sarracino, A. Puglisi, H. Touchette,  
J. Phys. A: Math. Theor. 46, 335002, (2013).

[3] “Entropy production in non-equilibrium fluctuating hydrodynamics”

G. Gradenigo, A. Puglisi and A. Sarracino,  
J. Chem. Phys. 137, 014509 (2012).

[4] “Non-equilibrium fluctuations in a driven stochastic Lorenz gas”

G. Gradenigo, U. Marini Bettolo Marconi, A. Puglisi, and A. Sarracino,  
Phys. Rev. E 85, 031112 (2012).

[5] “Dynamics of a massive intruder in a homogeneously driven granular fluid”

A. Puglisi, A. Sarracino, G. Gradenigo, and D. Villamaina,  
Granular Matter 14, 235 (2012).

[6] “Structure factors in granular experiments with homogenous fluidization”

A. Puglisi, A. Gnoli, G. Gradenigo, A. Sarracino, and D. Villamaina,  
J. Chem. Phys. 136, 014704 (2012).

[7] “Non-equilibrium length in granular fluids: From experiment to fluctuating hydrodynamics”

G. Gradenigo, A. Sarracino, D. Villamaina, and A. Puglisi,  
Europhys. Lett. 96, 14004 (2011).

[8] “Fluctuating hydrodynamics and correlation lengths in a driven granular fluid”

G. Gradenigo, A. Sarracino, D. Villamaina, and A. Puglisi,  
J. Stat. Mech. P08017 (2011).

[9] “Irreversible dynamics of a massive intruder in dense granular fluids”  
A. Sarracino, D. Villamaina, G. Gradenigo and A. Puglisi,  
Europhys. Lett. 92, 34001 (2010).

### **Anomalous diffusion**

[10] “Rare events and scaling properties in field-induced anomalous dynamics ”,  
R. Burioni, G. Gradenigo, A. Sarracino, A. Vezzani, A. Vulpiani, J. Stat.  
Mech. P09022 (2013).

[11] “Einstein relation in superdiffusive systems”  
G. Gradenigo, A. Sarracino, D. Villamaina, and A. Vulpiani,  
J. Stat. Mech. L06001 (2012).

[12] “On anomalous diffusion and the out of equilibrium response function  
in one-dimensional models”  
D. Villamaina, A. Sarracino, G. Gradenigo, A. Puglisi, and A. Vulpiani,  
J. Stat. Mech. L01002 (2011).

### **Ratchet effect**

[13] “Brownian ratchet in a thermal bath driven by Coulomb friction ”,  
A. Gnoli, A. Petri, F. Dalton, G. Gradenigo, G. Pontuale, A. Sarracino,  
A. Puglisi,  
Phys. Rev. Lett. 110, 120601 (2013).

[14] “The Ratchet effect in an ageing glass ”  
G. Gradenigo, A. Sarracino, D. Villamaina, T. Grigera, A. Puglisi,  
J. Stat. Mech. L12002 (2010).

### **Structural glasses**

[15] “Confinement as a tool to probe amorphous order ”,  
C. Cammarota, G. Gradenigo, G. Biroli,  
Phys. Rev. Lett. (Editor’s suggestion) 111, 107801 (2013).

[16] “Static correlations functions and domain walls in glass-forming liquids:  
the case of a sandwich geometry”  
G. Gradenigo, R. Trozzo, A. Cavagna, T. Grigera, P. Verrocchio,  
J. Chem. Phys. 138, 12A509 (2013).

[17] “Phase-Separation Perspective on Dynamic Heterogeneities in Glass-Forming Liquids”

C. Cammarota, A. Cavagna, I. Giardina, G. Gradenigo, T.S. Grigera, G. Parisi, P. Verrocchio,  
Phys. Rev. Lett. (Editor’s suggestion) 105, 055703 (2010).

[18] “Numerical determination of the exponents controlling the relationship between time, length and temperature in glass-forming liquids ”

C. Cammarota, A. Cavagna, G. Gradenigo, T.S. Grigera, P. Verrocchio,  
J. Chem. Phys. 131, 194901 (2009).

[19] “Evidence for a spinodal limit for amorphous excitations in glassy system”

C. Cammarota, A. Cavagna, G. Gradenigo, T.S. Grigera, P. Verrocchio,  
J. Stat. Mech. L12002 (2009).

### **Dynamical systems**

[20] “Fluctuations in partitioning systems with few degrees of freedom”

L. Cerino, G. Gradenigo, A. Sarracino, D. Villamaina, A. Vulpiani,  
accepted on Phys. Rev. E (2014).

[21] “A study of the Fermi-Pasta-Ulam problem in dimension two”

G. Benettin and G. Gradenigo,  
Chaos 18, 013112 (2008).

## **Papers under referral**

“The Random-Diluted Triangular Plaquette Model: study of phase transitions in a Kinetically Constrained Model”,

S. Franz, G. Gradenigo, S. Spigler,  
arXiv:1507.050721 (under referral on PRE).

## **Papers in preparation**

“Field-induced superdiffusion in Kinetically Constrained Models ”

G. Gradenigo, E. Bertin, G. Biroli.

“Anomalous transport and non-uniform Edwards measure from viscous friction”

G. Gradenigo, E. Bertin, J.-L. Barrat.

“Two condensation transitions in the stochastic Lorentz gas”

G. Gradenigo, S. N. Majumdar.

## Proceedings of international conferences

1. “The out of equilibrium response function in sub-diffusive systems”,  
G. Gradenigo, A. Puglisi, A. Sarracino, A. Vulpiani and D. Villamaina,  
*Physica Scripta* 86, 058516 (2012)
2. “Einstein Relation in Systems with Anomalous Diffusion”,  
G. Gradenigo, A. Sarracino, D. Villamaina and A. Vulpiani,  
*Acta Physica Polonica B* 44, 899 (2013)
3. “Scaling properties of field-induced superdiffusion in Continuous Time Random Walks”,  
R. Burioni, G. Gradenigo, A. Sarracino, A. Vezzani, A. Vulpiani,  
*Commun. Theor. Phys.* 62, 514 (2014).

## Book chapters

- “Out-of-equilibrium generalized fluctuation-dissipation relations”,  
G. Gradenigo, A. Puglisi, A. Sarracino, D. Villamaina, and A. Vulpiani,  
in “Nonequilibrium Statistical Physics of Small Systems: Fluctuation Relations and Beyond” (Wiley-VCH, Weinheim, 2013) R. Klages, W. Just, C. Jarzynski (Eds.)