

## Manuscripts Under Review

- “Cellular reprogramming dynamics follow a simple one-dimensional reaction coordinate”, Sai Teja Pusuluri, Alex H. Lang, Pankaj Mehta, and Horacio E. Castillo. ([arXiv:1505.03889](#)).

## Publications in Peer Reviewed Journals

- “Universal scaling in the aging of the strong glass former SiO<sub>2</sub>”, *J. Chem. Phys.* **144**, 234510 (2016) ([arXiv:1603.06259](#)).
- “Slow and Long-ranged Dynamical Heterogeneities in Dissipative Fluids”, Karina E. Avila, Horacio E. Castillo, Katharina Vollmayr-Lee, and Annette Zippelius, *Soft Matter*, **12**, 5461-5474, (2016).
- “Strong Dynamical Heterogeneity and Universal Scaling in Driven Granular Fluids”, Karina E. Avila, Horacio E. Castillo, Andrea Fiege, Katharina Vollmayr-Lee, and Annette Zippelius, *Phys. Rev. Lett.* **113**, 025701 (2014) ([arXiv:1312.3513](#)).
- “Fluctuations in the time variable and dynamical heterogeneity in glass-forming systems”, Karina E. Avila, Horacio E. Castillo, and Azita Parsaeian, *Phys. Rev. E* **88**, 042311 (2013) ([arXiv:1210.4483](#)).
- “Mapping dynamical heterogeneity in structural glasses to correlated fluctuations of the time variables”, Karina E. Avila, Horacio E. Castillo, and Azita Parsaeian, *Phys. Rev. Lett.* **107**, 265702 (2011) ([arXiv:1007.0520](#)).
- “Time reparameterization invariance in arbitrary-range p-spin models: symmetric versus non-symmetric dynamics” Gcina A. Mavimbela and Horacio E. Castillo, *J. Stat. Mech.* (2011) P05017 ([arXiv:1011.2225](#)).
- “Equilibrium and non-equilibrium fluctuations in a glass-forming liquid”, Azita Parsaeian and Horacio E. Castillo, *Phys. Rev. Lett.* **102**, 055704 (2009) ([arXiv:0802.2560](#)).
- “Time reparametrization symmetry in spin glass models”, Horacio E. Castillo, *Phys. Rev. B* **78**, 214430 (2008) ([arXiv:0801.0014](#)).
- “Growth of spatial correlations in the aging of a simple structural glass”, Azita Parsaeian and Horacio E. Castillo, *Phys. Rev. E* **78**, 060105(R) (2008) ([arXiv:cond-mat/0610789](#)).
- “Local fluctuations in the ageing of a simple structural glass”, Horacio E. Castillo and Azita Parsaeian, *Nature Physics*, **3**, 26 (2007) ([arXiv:cond-mat/0610857](#)).
- “Local fluctuations in the non-equilibrium dynamics of a Lennard-Jones Glass”, Horacio E. Castillo and Parthapratim Biswas, in *Fluctuations and Noise in Materials*, Proceedings of SPIE, Volume 5469, edited by D. Popović, M. B. Weissman, and Z. A. Rácz, (SPIE, Bellingham WA, 2004).
- “Spatially heterogeneous ages in glassy dynamics”, Horacio E. Castillo, Claudio Chamon, Leticia F. Cugliandolo, Jose Luis Iguain, and Malcolm P. Kennett, *Phys. Rev. B*, **68** 134442 (2003) ([arXiv:cond-mat/0211558](#)).
- “Separation of time-scales and reparametrization invariance for aging systems”, Claudio Chamon, Malcolm P. Kennett, Horacio E. Castillo, and Leticia F. Cugliandolo, *Phys. Rev. Lett.* **89**, 217201 (2002) ([arXiv:cond-mat/0109150](#)).
- “Heterogeneous aging in spin glasses”, Horacio E. Castillo, Claudio Chamon, Leticia F. Cugliandolo, and Malcolm P. Kennett, *Phys. Rev. Lett.* **88**, 237201 (2002) ([arXiv:cond-mat/0112272](#)).
- “Freezing of dynamical exponents in low dimensional random media”, Horacio E. Castillo and Pierre Le Doussal, *Phys. Rev. Lett.* **86**, 4859 (2001) ([arXiv:cond-mat/0006373](#)).
- “Extensive eigenvalues in spin-spin correlations: a tool for counting pure states in Ising spin glasses”, Jairo Sinova, Geoff Canright, Horacio E. Castillo, Allan H. MacDonald, *Phys. Rev. B* **63**, 104427 (2001) ([arXiv:cond-mat/0010302](#)).

- “Semi-microscopic theory of elasticity near the vulcanization transition”, Horacio E. Castillo and Paul M. Goldbart, *Phys. Rev. E* **62**, 8159 (2000) ([arXiv:cond-mat/9909054](#)).
- “Amorphous solid state: A locally stable thermodynamic phase of randomly constrained systems”, Horacio E. Castillo, Paul M. Goldbart, and Annette Zippelius, *Phys. Rev. B* **60**, 14702 (1999) ([arXiv:cond-mat/9905326](#)).
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- “Exact calculation of multifractal exponents of the critical wave function of Dirac fermions in a random magnetic field”, Horacio E. Castillo, Claudio de C. Chamon, Eduardo Fradkin, Paul M. Goldbart, and Christopher Mudry, *Phys. Rev. B* **56**, 10668 (1997) ([arXiv:cond-mat/9706084](#)).
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- “Distribution of localisation lengths in randomly crosslinked macromolecular networks”, P. M. Goldbart, and A. Zippelius, *Europhys. Lett.* **28**, 519 (1994).
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#### Unpublished manuscripts

- “Fluctuating Phases and Fluctuating Relaxation Times in Glass Forming Liquids” Geina A. Mavimbela, Horacio E. Castillo, Azita Parsaeian, ([arXiv:1210.1249](#)).
- “Universal fluctuations in the relaxation of structural glasses”, Azita Parsaeian and Horacio E. Castillo, ([arXiv:0811.3190](#)).