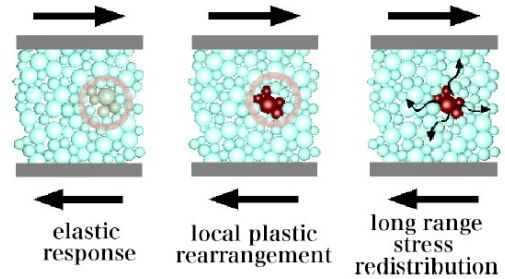


Post-Doc position, PSM, LIPhy, Grenoble

keywords: Failure and avalanche dynamics,
Soft matter
MD/Monte Carlo simulations,
Parallel programming techniques
(MPI/GPU)

duration and starting date:
1+1 year, starting in 2015, flexible



description: A post-doc position will be available in 2015 in the PSM team at the LIPhy in Grenoble. The aim of the project is to investigate failure precursors in soft matter in collaboration with our partner in Montpellier. The position is funded by the French national science agency (ANR-FAPRES), with a fixed, experience based salary.

We want to understand better the creep dynamics of soft matter close to the yielding transition. Literature on this topic is scarce and the theoretical understanding of the underlying physics very limited. This leaves many questions open: What is the influence of the microscopic details on the failure dynamics? To what extent is the dynamics universal? How do quantities like the dynamical structure factor measured in microscopic simulations compare with experiments? How can we define and identify plasticity on larger scales? And how can we based on these results develop more coarse grained models?

The post-doc will be working at the LIPhy in Grenoble and his/her role will be to setup microscopic simulations mimicking an experimental setup of our research partner in Montpellier[1], namely soft materials under load, below the yielding transition[2]. He/she will be able to participate in the comparison between experiments and numerical simulations and to the modeling. The work will developed in close collaboration with our partner in Montpellier.

requirements:

The ideal candidate for this position will be a recent doctoral graduate, who is highly motivated and has expertise in computational and/or statistical methods.

Useful skills and knowledge:

- Molecular dynamics and/or Monte Carlo simulations
- programming with Lammmps (or similar MD packages)
- C/C++, CUDA (or other parallel approaches)
- theory of soft matter and statistical physics

contact:

To apply, send your curriculum vitae, a cover letter including a description of past and present research accomplishments, as well as contact information for references to:

Dr. Kirsten Martens, Laboratoire Interdisciplinaire de Physique (LIPhy)

kirsten.martens@ujf-grenoble.fr

links:

Kirsten Martens: [personal homepage](#)

PSM (Statistical Physics and Modeling group): [group homepage](#)

literature:

[1] E. Tamborini, L. Cipelletti, L. Ramos, *Length-scale dependent aging and plasticity of a colloidal polycrystal under cyclic shear*, Phys. Rev. Lett., **113** 078301 (2014).

[2] P. Chaudhuri and J. Horbach, *Onset of flow in a confined colloidal glass under an imposed shear stress*, Phys. Rev. E, **88** 040301 (2013).