

INTERNSHIP PROPOSAL

(One page maximum)

Laboratory name: LPTMS

CNRS identification code: 8626

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Internship location: LPTMS

Thesis possibility after internship: YES\

Funding: YES

If YES, which type of funding: ANR

Critical behaviour in the creep dynamics

Summary (half a page maximum)

We focus on the creep dynamics of a magnetic domain wall. Indeed, at tiny magnetic fields, the wall creeps only via thermal activation over pinning centers. A localized instability triggers a cascade, akin to aftershocks following a large earthquake in a compact active region. How large are these reorganisations? The goal of this project is to show that their size diverges, decreasing the temperature revealing the existence of a disordered, out-of-equilibrium critical point. In this internship we introduce a model for the domain wall and adapt the Dijkstra algorithm to study the creep dynamics.

The internship can then lead to a PhD project in collaboration with D. Vandembroucq (PMMH, ESPCI)

Please, indicate which speciality(ies) seem(s) to be more adapted to the subject:

Condensed Matter Physics: YES/NO	Soft Matter and Biological Physics: YES/NO
Quantum Physics: YES/NO	Theoretical Physics: YES/NO