Seminar/Talk

From the statistical physics of polymer-chain networks to nonlinear elasticity

Antoine Gloria
Sorbonne Université, Paris

Host: Julian Fischer

In this talk I'll present a statistical model of polymer-chain networks based and shall study its limit in the regime of small chain-size. In a first part I will consider the associated free energy and prove a large-deviation principle with a rate-function given by the free energy of a continuum model (that takes the form of the integral of a quasiconvex energy density). In a second part, assuming that the Hamiltonian is independent of the temperature I'll establish the convergence of the rate-function to the (corresponding) Gamma-limit in the regime of small temperature. I will conclude with an application to polymer-physics, for which the "coarse-grained" Hamiltonian depends itself on temperature, and shall consider a diagonal regime.This is based on a joint work with Marco Cicalese (Munich) and Matthias Ruf (Brussels).

Thursday, July 5, 2018 04:00pm - 06:00pm
Big Seminar room Ground floor / Office Bldg West (I21.EG.101)

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