

Stochastic homogenization of heterogeneous nanochains

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By means of Gamma-convergence methods and ergodic theorems, we analyze one-dimensional particle systems that show heterogeneities due to impurities or specially chosen compositions. We are interested in the effective behaviour of the one-dimensional systems in the continuum limit. The singular behaviour of the allowed interaction potentials causes difficulties in the stochastic homogenization. In the talk I will explain how this can be overcome by an approximation argument. This is joint work with Laura Lauerbach, Stefan Neukamm and Mathias Schäffner.