

MIT/HARVARD ANALYSIS SEMINAR

Sylvia Serfaty
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will speak on:

"Vortices in the Ginzburg-Landau model in the strongly repulsive limit"

Date : *Friday, March 10, 2006*

Time : *4:15-5:15pm*

Location: *MIT 2-142*

Abstract: I will present a series of rigorous results on the 2-dimensional Ginzburg-Landau model describing superconductors in an applied magnetic field, in the asymptotic regime of "high-kappa" (or strongly repulsive limit) where the vortices become point-like. The vortices are topological singularities: they are zeros of the order parameter carrying a nonzero degree. The results derive the values of critical fields for which vortices appear in energy-minimizers, and the (energetically) optimal numbers and repartitions of the vortices, obtained through the derivation of limiting problems. If time allows I will also present results on non-minimizing critical points. Most results are joint works with Etienne Sandier (Paris 12).