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Pinning of Flux Lines by Planar Defects[1] ALEKSANDRA PETKOVIC, Argonne National Laboratory, THOMAS NATTERMANN, Institute of Theoretical Physics, Cologne, Germany — The technologically most interesting property of type-II superconductors is their ability to carry a bulk current with as little dissipation as possible. The Lorentz force acts on flux lines and hence gives rise to dissipation. Pinning centers play an important role in preventing the flux line motion and sustaining superconductivity. We study the influence of grain boundaries on order and transport in type-II superconductors and find that they lead to a novel glassy phase, planar glass [1,2]. In this talk we will characterize the planar glass and discuss its stability with respect to point impurities and columnar defects.
[1] A. Petkovic and T. Nattermann, Phys. Rev. Lett. **101**, 267005 (2008),
[2] A. Petkovic, T. Emig and T. Nattermann, Phys. Rev. B **79**, 224512 (2009).

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