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Negative Nernst effect in simulations of granular superconductors
ANDREAS ANDERSSON, JACK LIDMAR, KTH Stockholm — The Nernst effect has recently become an important probe of superconducting fluctuations in high-Tc superconductors. The sign of the Nernst coefficient $\nu = E_y/(-B\partial_x T)$ is positive for ordinary vortex motion down an applied temperature gradient. Here we consider simulations of granular superconducting thin films in the vortex liquid regime. We find that the Nernst coefficient can become negative for certain magnetic fields. We attribute this observation to the motion of vortex vacancies in an otherwise pinned vortex solid.

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