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**Proliferation of mesoscopic effects in transport of superconductors** MENGLING ZHANG, ALEX LEVCHENKO, Michigan State University — Universality of conductance fluctuations is the hallmark of mesoscopic physics. This phenomenon emerges from the quantum coherence of electron trajectories and is sensitive to changes in external magnetic field or gate voltage. There exists compelling physical evidence, ranging from the experiments in sub-micron scale superconducting rings to granular films driven across superconductor-insulator transition, that the role of mesoscopic fluctuations proliferate in the presence of superconducting correlations. We thus study theoretical the fate of universality of mesoscopic fluctuations in superconductors focusing on the kinetic characteristics such as conductance, thermopower, NMR relaxation rate, spin susceptibility etc.

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