

Abstract Submitted
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Spins on Metals: Noise in SQUIDs and Spin Glasses¹ ZHI CHEN, CLARE YU, Univ. of California, Irvine — Recent experiments at Stanford and Wisconsin have found evidence for magnetic defects on the surface of elemental metals like aluminum, niobium, and gold. Fluctuations of these impurities are the source of flux noise in SQUIDs. Flux noise is a major obstacle to the realization of using superconducting qubits to construct quantum computers. To see if flux noise can be described by spin glass noise, we have used Monte Carlo simulations of a 3D Ising spin glass to produce noise. We find that the noise is a maximum at the critical temperature. We compare our results to experimental measurements of the susceptibility, as well as the flux and inductance noise measured in SQUIDs.

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