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Can magnetic noise from Kondo traps explain high frequency flux noise in superconducting qubits?[1] LUIS DIAS DA SILVA, Instituto de Fisica, Universidade de Sao Paulo, ROGERIO DE SOUSA, Department of Physics and Astronomy, University of Victoria — In solid state devices, charge and magnetic noise have common microscopic origin. Both occur due to the presence of Kondo traps nearby metallic wires. We use numerical renormalization group calculations to show that, despite their common origin, charge and magnetic noise have opposing behavior controlled by completely different energy scales. While magnetic noise follows an universal scaling with the Kondo temperature, charge noise remains well described by non-interacting theory even when the trap is deep into the Kondo regime. We show how these results may explain the high frequency (f= 1-10 GHz) Ohmic flux noise observed in SQUIDs and superconducting qubits.

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