

Abstract Submitted
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Optimal Switching Time ISRAEL KLICH, Caltech, LEONID LEVITOV, MIT — We discuss the noise produced in the process of switching mesoscopic conductors between two noiseless states: perfectly connected and disconnected, in the presence of a bias voltage V . We show that there are two main contributions to the noise: a switching noise logarithmic in the time of observation T , and a quantum shot noise accumulated during the process of switching and proportional to V , this leads to a minimization problem for the optimal switching time. Switching noise is expected to be a fundamental parameter in nano-circuits. We also discuss the relation of this result to an estimation of entanglement entropy of a Fermi sea.

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