

Abstract Submitted
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**Full Counting Statistics for a Single-Electron Transistor:
Nonequilibrium Effects at Intermediate Conductance** YASUHIRO UTSUMI,
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Universität Karlsruhe — We calculate the probability distribution of current for
a single-electron transistor (SET) with intermediate strength conductance where
quantum fluctuations of the charge play a dominant role. The calculations are based
on the multichannel anisotropic Kondo model in the Majorana representation and
the fermionic Keldysh generating functional. The effects of quantum fluctuations
are taken into account by the summation of a certain subclass of diagrams, which
corresponds to the leading logarithmic approximation in the sense that the result is
consistent with the RG analysis. We have shown that in non-equilibrium situations
quantum fluctuations of the charge induce lifetime broadening for the charge states
of the central island. Consequences which can be detected in experiments include a
suppression of the probability of currents larger than the average value. Y. Utsumi,
D. Golubev, G. Schoen; PRL. 96, 086803 (2006)

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