

Seminář odd. 26

Tenkých vrstev a nanostruktur

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TÉMA

Phonon-Assisted Current Noise in Molecular Junctions

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We investigate the effects of phonon scattering on the electronic current noise through nanojunctions using the nonequilibrium Green's functions formalism extended to include the counting field. In the case of weak electron-phonon coupling and a single broad electronic level, we derive an analytic expression for the current noise at arbitrary temperature and identify physically distinct contributions based on their voltage dependence. We apply our theory to the experimentally relevant case of a deuterium molecule placed in a break junction and predict a significant inelastic contribution to the current noise.

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