

Abstract Submitted
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Current-current correlations in time domain for a tunnel junction in the quantum regime KARL THIBAUT, CHRISTIAN LUPIEN, BERTRAND REULET, Université de Sherbrooke — We have measured the current fluctuations emitted by a tunnel junction with a very wide bandwidth, from 0.5 to 12 GHz, down to very low temperature $T=35\text{mK}$. This allowed us to perform the spectroscopy (i.e., measure the frequency dependence) of thermal noise (no dc bias, variable temperature), shot noise (low temperature, variable dc voltage bias) and photon-assisted noise (ac bias). Thanks to the very wide bandwidth of our measurement, we can deduce the current-current correlator in time domain. We observe the thermal decay of this correlator as well as its oscillations with a period h/eV , a direct consequence of the effect of the Pauli principle in quantum transport.

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