Abstract Submitted for the MAR09 Meeting of The American Physical Society

Frequency-dependent Full Counting Statistics of Electron Transport in Double Quantum Dots RAMON AGUADO, DAVID MARCOS, CSIC, CLIVE EMARY, TOBIAS BRANDES, Technische Universität Berlin — Full Counting Statistics is a powerful tool to study correlations in stochastic processes. It has been applied in the last years to characterize nanoscale transport. We present a technique that allows to calculate finite frequency high-order correlators of the electronic current through an interacting nanostructure. We illustrate our technique by calculating the frequency-dependent shot noise (second order) and skewness (third order) of a double quantum dot. Our results demonstrate that the frequency- dependent skewness contains useful information about the internal quantum dynamics of the nanostructure in bias voltage regimes where the second-order correlations are dominated by thermal fluctuations.

> Ramon Aguado CSIC

Date submitted: 07 Dec 2008

Electronic form version 1.4