

Abstract Submitted  
for the MAR13 Meeting of  
The American Physical Society

**Scattering phase of quantum dots: Emergence of universal behavior**<sup>1</sup> PHILIPPE JACQUOD, Physics Department, University of Arizona, RODOLFO JALABERT, Institut de Physique et Chimie des Materiaux de Strasbourg, RAFAEL MOLINA, Instituto de Estructura de la Materia, CSIC, Serrano, DIETMAR WEINMANN, Institut de Physique et Chimie des Materiaux de Strasbourg — We investigate scattering through chaotic ballistic quantum dots in the Coulomb-blockade regime. Focusing on the scattering phase, we show that long universal sequences emerge in the short wavelength limit of many electrons on the dot, where phase lapses of  $\pi$  systematically occur in between two consecutive resonances. We further argue that such universal sequences become shorter and shorter as the wavelength becomes larger/the number of electrons on the dot is reduced. Our results are corroborated by numerics and are in qualitative and quantitative agreement with experimental results. We finally present numerical data on models of interacting electrons to show that strong correlations do not alter our conclusions.

<sup>1</sup>Supported by the Spanish MICINN through project FIS2009-07277, the NSF under grant No DMR-0706319, and the ANR through grant ANR-08-BLAN-0030-02

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Date submitted: 05 Nov 2012

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