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Universal oscillations in counting statistics CHRISTIAN FLINDT, Harvard University, CHRISTIAN FRICKE, FRANK HOHLS, Leibniz University Hannover, Germany, TOMAS NOVOTNY, Charles University, Czech Republich, KAREL NETOCNY, Academy of Science, Czech Republic, TOBIAS BRANDES, Technical University Berlin, Germany, ROLF. J. HAUG, Leibniz University Hannover, Germany — Noise and fluctuations are results of stochastic processes that originate from quantum or classical sources. Higher-order cumulants of the probability distribution underlying the stochastic events are believed to contain detailed information about the stochastic process, but they are often difficult to measure. In this talk we report the first measurements of the transient cumulants of the number of electrons passing through a quantum dot to very high orders (up to order 15) [1]. The cumulants grow factorially in magnitude with the cumulant order and show surprising oscillations as functions of measurement time. Based on theory for high-order derivatives in the complex plane we show that the oscillations in fact constitute a universal phenomenon, appearing as a function of almost any system parameter for a large class of stochastic systems. Our theory provides a unified interpretation of previous theoretical studies of high-order cumulants [2] as well as our new experimental data. [1] C. Flindt, C. Fricke, F. Hohls, T. Novotny, K. Netocny, T. Brandes & R. J. Haug, submitted (2008). [2] C. Flindt, T. Novotny, A. Braggio, M. Sassetti & A.-P. Jauho, *Phys. Rev. Lett.* **100**, 150601 (2008).

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