

Abstract Submitted  
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**Universality of Non-equilibrium Fluctuations in Strongly Correlated Quantum Liquids.** MEYDI FERRIER, Univ. Paris sud, TOMONORI ARAKAWA, TOKURO HATA, RYO FUJIWARA, Univ. Osaka, RAPHAELLE DELAGRANGE, RICHARD DEBLOCK, Univ. Paris sud, RUI SAKANO, ISSP, Univ. Tokyo, AKIRA OGURI, Univ. Osaka city, KENSUKE KOBAYASHI, Univ. Osaka — In a quantum dot, Kondo effect occurs when the spin of the confined electron is entangled with the electrons of the leads forming locally a strongly correlated Fermi-liquid. Our experiments were performed in such a dot formed in a single carbon nanotube, where Kondo effect with different symmetry groups, namely SU(2) and SU(4), shows up. In the latter case, as spin and orbital degrees of freedom are degenerate, two channels contribute to transport and Kondo resonance emerges for odd and even number of electrons. With our sample it was possible to investigate both symmetries near the unitary limit. In the Kondo regime, strong interaction creates a peculiar two-particle scattering which appears as an effective charge  $e^*$  for the quasi-particles. We have extracted the signature of this effective charge in the shot noise for both symmetry in good agreement with theory<sup>1</sup>. This result demonstrates that theory of the Kondo effect can be safely extended out of equilibrium even in the unconventional SU(4) symmetry.

<sup>1</sup>M. Ferrier *et al*, accepted in Nature Physics

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