

Current noise analysis for SU(4) Kondo screening in quantum dots

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Recent experiments in carbon nanotubes and semiconductor quantum dots have started to probe a possible SU(4) Kondo state by conductance measurements. For this entangled state, both orbital and spin degrees of freedom of the dot are screened by leads electrons. Here we discuss how noise measurements could be used to further characterize the SU(4) symmetry. We relate our discussion to recent proposals of observing a universal effective charge of $5/3 e$ in shot noise measurements for SU(2). This charge indicates the still strongly interacting nature of the Kondo Fermi-liquid fixed point. A charge $2/3 e$ is found for SU(4).