

Abstract Submitted
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Carbon Nanotubes: from SU4 to Dicke effect CARLOS A. BÜSSER, G.B. MARTINS, Oakland University, MI, P. ORELLANA, Universidad Católica del Norte, Chile, E. VERNEK, Universidade Federal de Uberlândia, Brazil, G.A. LARA, Universidad de Antofagasta, Chile, E.H. KIM, University of Windsor, Canada, E.V. ANDA, PUC-Rio, Brazil — Single electron transistors can be manufactured by coupling a Carbon Nanotubes (CNT) to metal leads. In this case the Kondo effect may arise. The difference between the Kondo effect in CNT and the same effect in quantum dots (QD) comes from the degeneracy of the chiral states of the CNT. While in QDs the Kondo effect is related to the SU(2) symmetry, in CNTs the spins with different chirality can give rise to a SU(4) Kondo effect with a larger T_K . On the other hand we have the so called bound states in the continuum (BICs) or Dicke effect. In this effect a localised state at the CNT is decoupled from the metal reservoirs. When this state cross the Fermi level is filled abruptly changing the many body physics of the CNT thus the transport properties. In this talk we discuss the possibility to find BICs in a CNT and the influence of this effect over the Kondo regime and the transport properties of the CNT at zero-bias.

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