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Symmetries and conductance in Kondo quantum dots EDSON VERNEK, CARLOS BÜSSER, Ohio University, ENRIQUE V. ANDA, PUC-Rio, Brasil, NANCY SANDLER, SERGIO E. ULLOA, Ohio University — The role of symmetries on nanoscale structures is essential for the different physical behavior exhibited in these systems while its understanding offers deeper insights into the observed properties. The ability to fabricate structures such as quantum dot arrays with tailored symmetries provides further motivation to understand the interplay of geometrical and orbital symmetries in interacting systems at low temperatures, where quantum coherence and Kondo correlations determine the electronic properties. In this work we study the transport properties of three interconnected quantum dots coupled to different leads in a triangular geometry. Conductance calculations carried out in a finite-U slave-boson mean field approximation show excellent agreement with results from the embedded cluster approximation (ECA), highlighting the rich features of the various physical regimes. We focus on and compare two important geometries with: *equilateral* (all couplings and leads identical) and *isosceles* (one lead and respective couplings different from the others) symmetries. In the first case, we show that only two degenerate orbitals contribute to the Kondo state conductance. Further, we show that the presence of an open third lead in all cases introduces dephasing which affects differently the various features of the conductance.

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