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Conductance signatures of quantum phase transitions in asymmetric double quantum dots[1] W. BRIAN LANE, Jacksonville U. and U. of Florida, KEVIN INGERSENT, U. of Florida, LUIS DIAS DA SILVA, Oak Ridge Natl. Lab. and U. of Tennessee, NANCY SANDLER, SERGIO ULLOA, Ohio U. — Double quantum dots (DQDs) are currently of great theoretical and experimental interest. A DQD device in which dot 1 is in the Kondo regime and dot 2 acts as a noninteracting resonant level can be tuned to access a pair of quantum phase transitions separating Kondo-screened and local-moment phases [1]. This talk focuses on the effects of introducing a nonzero Coulomb interaction U_2 on the second dot. For small U_2, the system continues to exhibit two quantum phase transitions, although their nature is markedly different than for $U_2 = 0$. However, stronger interactions $U_2 > U_{2,c}$ suppress the local-moment phase and destroy the quantum phase transitions. We use numerical renormalization-group techniques to identify signatures of these behaviors in the linear conductance of the DQD device. [1] L. G. G. V. Dias da Silva, N. P. Sandler, K. Ingersent, and S. E. Ulloa, Phys. Rev. Lett. **97**, 096603 (2006).

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