

Abstract Submitted  
for the MAR07 Meeting of  
The American Physical Society

**Exact solution of SU(4) non-equilibrium Kondo model at the Toulouse point.** SOLOMON DUKI, HARSH MATHUR, Case Western Reserve University — SU(4) symmetry in quantum dots has become a growing interest in both semiconductor quantum dots and carbon nanotube quantum dots[1]. We investigate theoretically the properties of an SU(4) Kondo model out of equilibrium by solving the problem exactly at a special point in the parameter space. The solution reveals that, in contrast to the SU(2) model, there are two more excitations in the system other than the charge and spin excitations. We investigate the differential conductance for arbitrary voltage bias.

[1] P. Jarillo-Herrero, J. Kong, H.S.J. van der Zant, C. Dekker, L.P. Kouwenhoven and S. De Franceschi, [http://www.nature.com/openurl?url\\_ver=Z39.88-2004&rft\\_val\\_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=journal&rft.volume=434&rft.spage=484&rft.date=2005](http://www.nature.com/openurl?url_ver=Z39.88-2004&rft_val_fmt=info:ofi/fmt:kev:mtx:journal&rft.genre=journal&rft.volume=434&rft.spage=484&rft.date=2005) (Nature) 434, 484, (2005).

Solomon Duki  
Case Western Reserve University

Date submitted: 22 Nov 2006

Electronic form version 1.4