Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

Multichannel Kondo Models in non-Abelian Quantum Hall Droplets[1] GREGORY A. FIETE, University of Texas at Austin, WAHEB BISHARA, California Institute of Technology, CHETAN NAYAK, Microsoft Station Q and Department of Physics, UCSB — We study the coupling between a quantum dot and the edge of a non-Abelian fractional quantum Hall state which is spatially separated from it by an integer quantum Hall state. Near a resonance, the physics at energy scales below the level spacing of the edge states of the dot is governed by a k-channel Kondo model when the quantum Hall state is a Read-Rezayi state at filling fraction $\nu = 2+k/(k+2)$ or its particle-hole conjugate at $\nu = 2+2/(k+2)$. The k-channel Kondo model is channel isotropic even without fine tuning in the former state; in the latter, it is generically channel anisotropic. In the special case of $k = 2$, our results provide a new venue, realized in a mesoscopic context, to distinguish between the Pfaffian and anti-Pfaffian states at filling fraction $\nu = 5/2$.

[1]G. A. Fiete, W. Bishara, and C. Nayak, Phys. Rev. Lett. 101, 176801 (2008)

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Date submitted: 21 Nov 2008 Electronic form version 1.4