

Abstract Submitted  
for the MAR15 Meeting of  
The American Physical Society

**Few-body treatment of the quantum Hall system**<sup>1</sup> CHRIS GREENE, KEVIN DAILY, RACHEL WOOTEN, Purdue University — The quantum Hall system is perhaps the simplest real physical system to exhibit complicated, highly-correlated quantum behavior<sup>2</sup>. Our initial theoretical exploration of this problem approaches it from a few-body perspective using the adiabatic hyperspherical representation<sup>3</sup> developed originally for atomic systems. Such a 2D system with interacting charged particles that move in an external magnetic field can be simulated for cold atoms using artificial vector gauge potentials.

<sup>1</sup>Supported by NSF

<sup>2</sup>D. C. Tsui, H. L. Stormer, and A. C. Gossard, Phys. Rev. Lett. **48**, 1559 (1982)

<sup>3</sup>J. Macek, J. Phys. B: At. Mol. Phys., **1** 831 (1968).

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Date submitted: 14 Nov 2014

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