## Abstract Submitted for the MAR16 Meeting of The American Physical Society

SU(3) and SU(4) singlet quantum Hall states at  $\nu = 2/3^1$ FENGCHENG WU, Department of Physics, University of Texas at Austin, INTI SODEMANN, Department of Physics, Massachusetts Institute of Technology, AL-LAN H. MACDONALD, Department of Physics, University of Texas at Austin, THIERRY JOLICOEUR, Laboratoire de Physique Théorique et Modèles statistiques, CNRS and Université Paris-Sud — We report on an exact diagonalization study of fractional quantum Hall states at a filling factor  $\nu = 2/3$  in a system with a four-fold degenerate n=0 Landau level and SU(4) symmetric Coulomb interactions. Our investigation reveals previously unidentified SU(3) and SU(4) singlet ground states which appear at flux quantum shift 2 when a spherical geometry is employed, and lie outside the established composite-fermion or multicomponent Halperin state patterns. We will present the pair correlation functions of these states, and describe similar singlets at another filling factor 2/5. Strategies to construct trial wave functions will be discussed.

<sup>1</sup>F. Wu, I. Sodemann, A. H. MacDonald and Th. Jolicoeur, Phys. Rev. Lett. 115, 166805 (2015)

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