

Abstract Submitted  
for the MAR16 Meeting of  
The American Physical Society

**Merlon deconfinement in the quantum Hall bilayer at intermediate distances** MILICA MILOVANOVIC, Institute of Physics Belgrade, EDIB DOBARDZIC, Faculty of Physics, University of Belgrade, ZLATKO PAPIĆ, University of Leeds — Quantum Hall bilayer phase diagram with respect to interlayer distance bears a remarkable similarity with phase diagrams of strongly correlated systems as a function of doping, with magnetic ordering on the one end and Fermi-liquid-like behavior on the other. Moreover, it has been suggested [1] that a BCS correlated state of composite fermions with p-wave pairing may exist in the intermediate region. We discuss features of this state using the composite boson point of view, and exact diagonalization calculations on the torus. Furthermore, we argue that in the same state there is a possibility for meron deconfinement, i.e., the deconfinement of the vortex excitations of the magnetically ordered phase. [1] G. Moller, S. H. Simon, and E. H. Rezayi, Phys. Rev. Lett. 101, 176803 (2008); G. Moller, S. H. Simon, and E. H. Rezayi, Phys. Rev. B 79, 125106 (2009).

Milica Milovanovic  
Institute of Physics Belgrade

Date submitted: 01 Nov 2015

Electronic form version 1.4