

Fractionalization into Merons in Quantum Dots

Aleksandra Petković*† and Milica V. Milovanović*

*Institute of Physics, P.O. Box 68, 11080 Belgrade, Serbia

†Institut für Theoretische Physik, Universität zu Köln, 50937 Köln, Germany

Abstract. We study by exact diagonalization, in the lowest Landau level approximation, the Coulomb interaction problem of $N = 4$ and $N = 6$ quantum dots in the limit of zero Zeeman coupling. We find that meron excitations constitute the lowest lying states of the quantum dots. This is based on a mapping between the excitations of the dot and states of the Haldane-Shastry spin chain.