

Abstract Submitted
for the MAR12 Meeting of
The American Physical Society

Microscopic nature of the backward propagating neutral edge modes of the “negative” flux FQHE states YINGHAI WU, SREEJITH GANESH JAYA, JAINENDRA JAIN, The Pennsylvania State University — It is believed that FQHE states that require antiparallel vortex attachment, e.g. $2/3$, have neutral modes propagating in the backward direction. Recent experiments have observed signatures of such modes. We study the edge excitations of the fully spin polarized as well as spin singlet $2/3$ state both from exact diagonalization and from the microscopic composite fermion (CF) theory, to gain insight into the microscopic nature of the neutral edge modes. We investigate the validity of the CF theory for the edge modes, and also study the dependence on the form of the interaction and the background potential. We further evaluate the spectral weights and compare them with the predictions from the effective bosonic description.

Sreejith Ganesh Jaya
The Pennsylvania State University

Date submitted: 21 Nov 2011

Electronic form version 1.4