

Abstract Submitted  
for the MAR14 Meeting of  
The American Physical Society

**Fractionally charged bound states of an impurity in a fractional quantum Hall system** KELLY PATTON, MICHAEL GELLER, The University of Georgia, The Dept. of Physics & Astronomy — The single-particle spectral function for an incompressible fractional quantum Hall state of the lowest Landau level (LLL) in the presence of a short-ranged attractive impurity potential is calculated via exact diagonalization. In contrast to the noninteracting case, where only a single bound state below the LLL, electron-electron interactions strongly renormalize the impurity potential, effectively giving it a finite range, which supports many quasi-bound states (long-lived resonances). Averaging the spectral weights  $Z$  of the quasi-bound states and extrapolating to the thermodynamic limit, for filling factor  $\nu = 1/3$  we find evidence consistent with localized fractionally charged  $e/3$  quasiparticles. For  $\nu = 2/5$ , the results are slightly more ambiguous, due to finite size effects and possible bunching of Laughlin-quasiparticles.

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Date submitted: 14 Nov 2013

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