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**Interactions and Landau level mixing at large half odd-integer filling** PETER SMITH, MALCOLM KENNETT, Department of Physics, Simon Fraser University — Recent transport experiments on two-dimensional hole systems (2DHSs) in a strong perpendicular magnetic field show variations in the anisotropy of resistivity at half odd-integer filling fractions  $\nu=7/2$ ,  $9/2$ , and  $11/2$  that differ from those seen in two-dimensional electron systems <sup>1</sup>. It has been suggested that spin-orbit coupling in 2DHSs leads to these unusual transport properties, as it gives rise to Landau level mixing. We consider the general problem of interacting fermions subject to a perpendicular magnetic field with Landau level mixing in the limit of large Landau levels, and discuss the effect of Landau level mixing on charge-density wave formation in comparison to the single Landau level case <sup>2</sup>. We study the case of spin-orbit induced mixing in detail, and discuss implications for experiments.

<sup>1</sup>M. J. Manfra et al., Phys. Rev. Lett. **98**, 206804 (2007).

<sup>2</sup>R. Moessner and J. T. Chalker, Phys. Rev. B. **54**, 5006 (1996).

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