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Symmetry Breaking by Periodic Potentials and Randomness in Quantum Hall Systems BARRY FRIEDMAN, Physics Department, Sam Houston State University, BEN MCCARTY, Physics Department, Texas Tech University — The effect of a one dimensional periodic potential on quantum Hall systems is investigated using direct diagonalization and the density matrix renormalization group (dmrg). We find that the phase of the periodic potential (i.e. averaging over the phase) has minimal effect on symmetry breaking, however the addition of a small random potential tends to decrease finite size effects. For certain parameter values, randomness tends to increase symmetry breaking. Preliminary results using dmrg, for larger system sizes, with no randomness, will be presented.

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