Abstract Submitted
for the MAR06 Meeting of
The American Physical Society

Exactly solvable Hamiltonian for the chiral spin liquid DARRELL SCHROETER, Occidental College, ELIOT KAPIT, Reed College — An exact spin Hamiltonian for the chiral spin liquid will be presented. The model starts with the quantum Hall wave function on a lattice of N sites in a toroidal geometry, a state that describes a spin liquid that violates the symmetries of parity and time reversal. A parent Hamiltonian for which the state is the exact ground state is constructed out of vector operators that annihilate the ground state. This model avoids the subtle error that has been identified [D. F. Schroeter, Ann. Phys. **310**, 155 (2004)] in Laughlin's original solution to the problem [R. B. Laughlin, Ann. Phys. **191**, 163 (1989)]. The construction of the model and its numerical verification will be presented.

Darrell Schroeter
Occidental College

Date submitted: 30 Nov 2005 Electronic form version 1.4