Wave functions for hierarchical quantum Hall states

JUHA SUORSA, University of Oslo, HANS HANSSON, Stockholm University, SUSANNE VIEFERS, University of Oslo — We propose a framework for obtaining microscopic representative wave functions which reflect Wen and Zee’s classification of Abelian quantum Hall states. Explicit wave functions are related to coherent state transforms of combinations of chiral and antichiral blocks in simple conformal field theories. The approach reproduces all positive and negative Jain states as special cases, and also encompasses hierarchical states which involve condensates of both quasiholes and quasielectrons. We show that the proposed wave functions reduce to the known ground states in the thin cylinder limit.