

Abstract Submitted  
for the MAR09 Meeting of  
The American Physical Society

**Jack Polynomials, W-algebras and application to Fractional Quantum Hall Effect** STEVEN H. SIMON, Oxford University, B. ANDREI BERNEVIG, Princeton University, VICTOR GURARIE, University of Colorado — We examine Jack symmetric functions and certain W-algebras as schemes for generating fractional quantum Hall wavefunctions. We add substantially to the evidence that the Jack functions correspond to certain W-algebras, by calculating the central charge and scaling dimensions of some of the fields in both cases and showing that they match. Except for the Read-Rezayi series all of these Jack symmetric functions turn out to be nonunitary theories. We discuss the (perhaps optimistic) possibility that these approaches may have relevance to various physical quantum Hall systems. Open questions in the field, as well as why this is of importance to those concerned with real experiments, will also be discussed.

Steven H. Simon  
Oxford University

Date submitted: 21 Nov 2008

Electronic form version 1.4