Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Fibonacci anyons through the 1D coherent state representation JOHN FLAVIN, ALEXANDER SEIDEL, Department of Physics and Center for Materials Innovation, Washington University, St. Louis, MO 63136, USA — Recent work has shown that a large class of fractional quantum Hall trial wave functions can be uniquely associated with simple strings of integer patterns, either through the thin torus limit, or Jack polynomials, or patterns of zeros. An interesting question is to what extent these patterns contain information about the statistics of the quasi-particles and quasi-holes of the underlying quantum Hall state, in particular for non-Abelian states. Using the thin torus limit together with the notion of adiabatic continuity and a simple coherent state Ansatz, it has been demonstrated that these patterns essentially uniquely determine the statistics of the $\nu = 1$ Moore-Read state. Here we show that the very same method is also applicable to the $k = 3$ Read-Rezayi state at $\nu = 3/2$. We find that within this approach only two representations of the braid group are consistent with the given set of integer patterns, which are identical up to complex conjugation and an overall Abelian phase. One of these solutions agrees completely with the conformal block monodromies associated to the Read-Rezayi trial wavefunctions. [References: A. Seidel, Phys. Rev. Lett. 101, 196802 (2008), A. Seidel, D.-H. Lee, Phys. Rev. B 76, 155101 (2007).]

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Date submitted: 15 Dec 2009 Electronic form version 1.4