

Abstract Submitted
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Braiding statistics of the Gaffnian through the coherent state representation¹ JOHN FLAVIN, ALEXANDER SEIDEL, Washington University in St. Louis — Certain quantum Hall states have trial wave functions that can be connected to non-unitary conformal field theories, and arguments exist implying that such wave functions cannot describe gapped states. For these trial wave functions, the question arises whether braiding statistics may still be well defined through a formal Berry phase calculation. In essence, this corresponds to assuming an artificial gap to “non-zero modes” introduced by non-local terms in the Hamiltonian. The presence of long ranged correlations may still foil the emergence of well defined statistics. However, assuming that this is not the case, the question of what such statistics would be, and how they compare to those defined in terms of conformal block monodromies, can be analyzed using a recently developed coherent state Ansatz based on the thin torus limit. We report pertinent results for the Gaffnian state. Time and/or results permitting, we also present developments on the application of this method to a state by Thomale *et al.*, the associated conformal field theory of which is currently unknown. [References: S. Simon *et al.*, Phys. Rev. B 75, 075317 (2007), J. Flavin and A. Seidel, arXiv:1108.2734v1, N. Read, Phys. Rev. B 79, 045308 (2009)]

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