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Entanglement and dispersion of single-mode excitations in fractional quantum Hall effect YANG-LE WU, University of Maryland, College Park, N. REGNAULT, Princeton University, Ecole Normale Superieure and CNRS, B. ANDREI BERNEVIG, Princeton University — Low-lying excitations above the topological ground state of a fractional quantum Hall system can be captured by the single mode approximation. We revisit this problem using the recently developed matrix product states (MPS) for quantum Hall model wave functions. We will show how to extend the MPS construction for the ground state to the single-mode excitations. This alternative representation reveals the entanglement structure of these excited states. We will also discuss the link between the dispersion of these excitations and the spectral properties of the MPS transfer matrix.

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