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Vortex lattice transitions in cyclic spinor condensates SUBROTO MUKERJEE, UC Berkeley, RYAN BARNETT, California Institute of Technology, JOEL MOORE, UC Berkeley — We study the energetics of vortices and vortex lattices produced by rotation in the cyclic phase of $F = 2$ spinor Bose condensates. In addition to the familiar triangular lattice predicted by Tkachenko for ^4He , many more complex lattices appear in this system as a result of the spin degree of freedom. In particular, we predict a magnetic-field-driven transition from a triangular lattice to a honeycomb lattice. Other transitions and lattice geometries are driven at constant field by changes in the temperature-dependent ratio of charge and spin stiffnesses, including a transition through an aperiodic vortex structure.

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