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Angular Momentum in a Chiral P-wave Superconductor PHILLIP ASHBY, McMaster Univiersity, RAHUL ROY, University of Oxford, CATHERINE KALLIN, McMaster Univiersity — A chiral p-wave superconductor spontaneously breaks time reversal symmetry and is expected to have a spontaneous macroscopic angular momentum in the ground state. This angular momentum is not a topological invariant, but we find it is surprisingly robust to changes in the system parameters. We study the intrinsic angular momentum of the ground state, within Bogoliubov-deGennes theory, for a variety of geometries, including in a harmonic trap, and vary both the chiral p-wave pairing strength as well as the BCS cutoff parameter. We compare these results to the behaviour of the Hall viscosity, which has been proposed as a topological invariant for a chiral p-wave.

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