

Abstract Submitted
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Spin Order and Spin Textures in Paired Quantum Hall States

IVAILO DIMOV, CHETAN NAYAK, UCLA — We consider quantum Hall ground states and low-lying excitations at even-denominator filling fractions, especially $\nu = 5/2$, in the limit of small Zeeman energy. We show that an incompressible ground state will exhibit spontaneous ferromagnetism, which implies that it is in the universality class of the Pfaffian state. Sufficiently strong spin-orbit coupling will drive the system into the $(3, 3, 1)$ state. The Pfaffian state has low-energy charged excitations which are spin textures. If the Zeeman energy is below a critical value, the ferromagnetic exchange energy stabilizes a bound state of two non-Abelian quasiparticles.

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