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Non-Abelian Anyon Superconductivity WAHEB BISHARA, Caltech, CHETAN NAYAK, Microsoft Station Q and UCLA — Non-Abelian Anyons are proposed to exist in certain spin models and in Quantuam Hall systems at certain filling fractions. In this work we studied the ground state of dynamical $SU(2)$ level κ Chern Simons non-abelian anyons at finite density and no external magnetic field. We find that in the large κ limit the topological interaction induces a pairing instability and the ground state is a superconductor with $d + id$ gap symmetry. We also develop a picture of pairing for the special value $\kappa = 2$ and argue that the ground state is a superfluid of pairs for all values of κ.

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