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Dynamical instability of the XY spiral state of ferromagnetic condensates ROBERT CHERNG, VLADIMIR GRITSEV, Harvard University, DAN STAMPER-KURN, University of California, Berkeley, EUGENE DEMLER, Harvard University — We calculate the spectrum of collective excitations of the XY spiral state prepared adiabatically or suddenly from a uniform ferromagnetic F = 1 condensate. For spiral wavevectors past a critical value, spin wave excitation energies become imaginary indicating a dynamical instability. We construct phase diagrams as functions of spiral wavevector and quadratic Zeeman energy.

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