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Phase ordering kinetics of a spinor condensate SUBROTO MUKERJEE, CENKE XU, JOEL MOORE, Department of Physics, University of California, Berkeley — Bose-Einstein condensates of atoms with nonzero total spin show order parameters and gapless excitations that are distinct from both ordinary magnetic states and superfluid helium. In light of recent experiments on the development of magnetic order in this system, we construct a model dynamics (in the spirit of dynamical critical phenomena) that is consistent with the equilibrium physics of the system and reproduces all the relevant gapless modes of the magnetized condensate. Although the parameters in this time-dependent Ginzburg-Landau are fixed by quantities that are in principle measurable, there are several parameter-independent predictions that can be directly compared to existing experiments: we focus in this talk on the phase-ordering kinetics of magnetic and superfluid order in 2D condensates in an axial field, for comparison with the experiments of Higbie *et al.*(cond-mat/0502517).

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