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Thermalization in quenched spinor condensates MUKUND VENGALATTORE, Cornell University, RYAN BARNETT, University of Maryland, College Park, ANATOLI POLKOVNIKOV — Motivated by recent experiments on spinor Bose gases, we consider the dynamics of a spin-1 Bose condensate following a quantum quench from a polar phase to a ferromagnetic phase. We apply the truncated Wigner approximation (TWA) to the spinor system with all spatial and spin degrees of freedom. For short times following the quench, we find excellent agreement with the linearized Bogoliubov treatment showing, for instance, that the longitudinal magnetization density grows at twice the gain exponent as the transverse magnetization. In the saturated regime (where the linearized treatment fails), we provide evidence of thermalization. For large quenches, we interpret our results as a dynamical Berezinskii-Kosterlitz-Thouless transition resulting from the unbinding of vortices in the spin and charge degrees of freedom.

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