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Amplification of quantum fluctuations across a quantum phase transition in a spinor BEC SABRINA LESLIE, JENNIE GUZMAN, MUKUND VENGALATTORE, DAN STAMPER-KURN, Department of Physics, UC Berkeley — We study the amplification of quantum fluctuations in a ^{87}Rb spinor BEC that is rapidly quenched from its paramagnetic phase to its ferromagnetic phase. By characterizing the onset of spontaneous ferromagnetism and the amplification properties of the spinor condensate, we probe the initial quantum fluctuations from which the resulting structures evolve. To characterize the spinor condensate as an amplifier, we temporally and spatially resolve the evolution of the vector magnetization profile as a function of the end point of the quench. In particular, we describe the formation of transversely magnetized domains and vortices as a function of the end point.

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