Formation of Solitons During the BEC Phase Transition JIAJIA CHANG, CHRIS HAMNER, PETER ENGELS, Washington State University — During the formation of a Bose-Einstein condensate, local differences in the emerging phase and interferences can lead to topological defects. In our experiment we analyze these dynamics in an elongated geometry and observe a pronounced appearance of solitons when the phase transition from a cloud of classical $^{87}\text{Rb}$ atoms to a BEC in a cigar-shaped trap is crossed sufficiently rapidly. The spontaneous formation of such topological defects is a general feature of continuous phase transitions. Recent and ongoing results will be discussed.

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