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Nonadiabatic production of spinor condensates with a QUIC trap PENG ZHANG, Georgia Institute of Technology, ZHAN XU, Tsinghua University, Beijing, China, LI YOU, Georgia Institute of Technology, GEORGIA INSTITUTE OF TECHNOLOGY COLLABORATION, TSINGHUA UNIVERSITY, BEIJING, CHINA COLLABORATION — A recent experiment [Xiu-Quan Ma *et al.*, Chin. Phys. Lett. **22**, 1106 (2005)] reported the observation of a multi-component spinor condensate when the magnetic field of a QUIC trap containing a spin polarized condensate was switched off. Our theoretical study show that this phenomena can be described within a general framework of the nonadiabatic Landau-Zener transition theory. We will discuss the population transfers at the zero field level crossing for this interesting case involving more than two levels, and provide a detailed understanding of the relevant nonadiabatic behavior.

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