

Abstract Submitted
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Dynamical localization of spin dynamics in a spin-1 Bose condensate via modulation of spin interaction¹ WENXIAN ZHANG, Department of Optical Science and Engineering, Fudan University, Shanghai 200433, China, BO SUN, Department of Physics, Auburn University, Auburn, Alabama 36849, USA, M.S. CHAPMAN, L. YOU, School of Physics, Georgia Institute of Technology, Atlanta, Georgia 30332-0430, USA — Spin mixing dynamics in a spin-1 Bose-Einstein condensate can be localized by a temporal modulation of spin exchange interaction, which is tunable via optical Feshbach resonance. Adopting techniques from coherent control, we demonstrate the localization/freezing of spin mixing dynamics, and the suppression of the intrinsic dynamic instability and spontaneous spin domain formation in a ferromagnetically interacting condensate of ^{87}Rb atoms. Different control schemes are also discussed.

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