Abstract Submitted
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Experimental verification of predicted oscillations near a spin resonance[1] V.S. MOROZOV, A.W. CHAO, A.D. KRISCH, M.A. LEONOVA, R.S. RAYMOND, D.W. SIVERS, V.K. WONG, Univ. of Michigan, Ann Arbor, MI 48109-1040, A. GARISHVILI, R. GEBEL, A. LEHRACH, B. LORENTZ, R. MAIER, D. PRASUHN, H. STOCKHORST, D. WELSCH, Forschungszentrum Jülich, IKP, D-52425 Jülich, F. HINTERBERGER, K. ULBRICH, Helmholtz Inst., Univ. Bonn, D-53115 Bonn, A. SCHNASE, JAEA/J-PARC, Tokai-Mura, Ibaraki 319-1195, Japan, E.J. STEPHENSON, IUCF, Indiana Univ., Bloomington, IN 47408-0768, N.P.M. BRANTJES, C.J.G. ONDERWATER, M. DA SILVA, Univ. of Groningen, the Netherlands — The Chao matrix formalism allows analytic calculations of a beam's polarization behavior inside a spin resonance. We recently tested its prediction of polarization oscillations occurring in a stored beam of polarized particles near a spin resonance. Using a 1.85 GeV/c polarized deuteron beam stored in COSY, we swept a new rf solenoid's frequency rather rapidly through 400 Hz during 100 ms, while varying the distance between the sweep's end frequency and the central frequency of an rf-induced spin resonance. Our measurements of the deuteron's polarization near and inside the resonance agree with the Chao formalism's predicted oscillations.

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