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Magnetization Dynamics in the Cone Phase of Au/Co/Au thin films near the spin-reorientation transition S. ROY, Lawrence Berkeley National Lab, K.A. SEU, D. PARKS, R. SU, Physics Department, University of Oregon , J.J. TURNER, Department of Physics & Astronomy, State University of New York at Stony Brook, S. PARK, Physics Department, Pusan National University, Korea, C.M. FALCO, Optical Sciences Center, University of Arizona, Tucson, S.D. KEVAN, Physics Department, University of Oregon — We report measurements of slow magnetization fluctuations in an ultrathin Au/Co/Au system that exhibits a spin reorientation phase transition as a function of temperature. The intermediate scattering function is well described by a stretched exponential that is indicative of cooperative motion throughout the temperature range of 150 - 300 K. The decay times were found to exhibit a maximum at the transition temperature. The slowdown has been explained as due to formation of a shallow double well in the energy landscape by the different competing interactions. Our results show that slow dynamics in the mesoscopic length scale can provide valuable insights into the nature of magnetic phase transitions. Work at LBNL is supported by DOE.

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