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Nano-scale Spin State in Invar Alloy Fe-36at%Ni PENG ZHAO, P. CHRIS HAMMEL, Department of Physics, Ohio State University, JI-CHENG ZHAO, Department of Material Science and Engineering, Ohio State University — We use high-resolution ferromagnetic resonance force microscopy (FMRFM) to image the nano-scale spin structure of an Invar alloy (Fe-36at%Ni) to test the well-known two-spin-state hypothesis proposed by Weiss. Weiss proposed that the two-spin- state model could explain the Invar effect; but to our knowledge this has have not been experimentally confirmed. With nano-scale spatial resolution of FMRFM, we intend to experimentally examine the existence or absence of such states in the Fe-36at%Ni Invar alloy.

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