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Onset of Deformation in ^{60}Ni .¹ W.D. WEINTRAUB, H.Q. JIN, W. REVIOL, L.L. RIEDINGER, *Univ. of Tennessee*, C. BAKTASH, M.J. BRINKMAN, D.J. DEAN, C.-H. YU, *ORNL*, M. DEVLIN, D.R. LAFOSSE, D.G. SARANTITES, *Washington Univ.*, M. LEDDY, *Univ of Manchester*, I.Y. LEE, A.O. MACCHIAVELLI, *LBNL*, D. RUDOLPH, *Ludwig-Maximilians-Universität München* — High-spin states in ^{60}Ni were populated using the $^{28}\text{Si}(^{36}\text{Ar},4p)$ reaction with beam energy of 136 MeV. Gammasphere at LBNL was used in conjunction with Microball to measure gamma rays selected for the charged-particle exit channels of interest. A total of 2 billion events was recorded, with the 4p channel to ^{60}Ni representing approximately 11% of the data. In our analysis, the previously known level scheme² has been extended up to energy and spin of 20 MeV and 20 \hbar . The multiplicity of levels up to $I = 10$ are well explained by shell-model calculations including the $g_{9/2}$ single-particle orbital into the fp -shell configuration space. At higher spins, evidence for rotational-like behavior increases. Two apparently rotational structures have large $M1$ values and are perhaps shears bands, likely involving one $g_{9/2}$ particle. Furthermore, an $E2$ sequence with a larger moment of inertia is observed that could correspond to other deformed structures in the region, involving two $g_{9/2}$ particles. Comparisons to calculations will be given.

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²G. Moyat *et al.*, Nuclear Physics **A318**, 236 (1979).

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