

Abstract Submitted
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Pseudo-gap Observed at Martensite Transition in Ni₂MnGa Single Crystal C.P. OPEIL, Boston College, J.C. LASHLEY, R.K. SCHULZE, B. MIHAILA, W.L. HULTS, J.L. SMITH, Los Alamos National Laboratory, P.S. RISEBOROUGH, Temple University, L. MANOSA, A. PLANES, Universitat de Barcelona — Specific heat and coefficient of linear thermal expansion coefficient measurements show that the ferromagnetic shape-memory alloy Ni₂MnGa single crystal exhibits a pre-martensitic transition (PMT) at T = 214 K and a MT at 196 K. Lee *et al.*¹ predicts that magnetically-tuned Fermi-surface nesting at $\mathbf{q} = (2\pi/3a)(1,1,0)$ is responsible for phonon softening at the PMT. On the basis of temperature dependant angle resolved photoemission (ARPES) measurements, we show that a pseudo-gap opens at 0.3 eV below the Fermi energy at the martensitic transition (MT) thus providing further evidence that the Fermi surface is nested at the MT and is only partially nested at the PMT.

¹Y. Lee, J. Y. Rhee, B. N. Harmon, *Physical Review B* **66**, 054424 (2002).

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