

Abstract Submitted
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Pressure tuning of itinerant magnetism in Mo_3Sb_7 YISHU WANG, Univ of Chicago, JINGUANG CHENG, Chinese Academy of Sciences, ALEXANDER PALMER, DANIEL SILEVITCH, THOMAS ROSENBAUM, Univ of Chicago, JIAQIANG YAN, BRIAN SALES, Oak Ridge National Laboratory, YOSHIYA UWATOKO, University of Tokyo, YEJUN FENG, Argonne National Laboratory — Mo_3Sb_7 is a recently discovered itinerant antiferromagnet with a magnetic phase formed by spin dimerization at 53 K and ambient pressure, followed by a 2.3 K superconducting phase. In concert with the dimer pairing of $S=1/2$ Mo ions, a contraction of the crystalline lattice breaks the cubic symmetry. Here we use both high pressure x-ray single crystal diffraction and electrical transport techniques to investigate the magnetic behavior and map out the P-T phase diagram of Mo_3Sb_7 . Our results demonstrate that the magnetic phase is eventually suppressed by high pressure, where the lattice structure returns to cubic. The disappearance of the antiferromagnetic phase in Mo_3Sb_7 could influence the evolution of the superconducting state.

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