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Node-like excitations in superconducting PbMo_6S_8 probed by scanning tunneling spectroscopy GILLES SANTI, DPMC/MaNEP, University of Geneva, Switzerland, CÉDRIC DUBOIS, Dept of Materials Science and Eng., M.I.T., U.S.A., ALEXANDER PETROVIC, ØYSTEIN FISCHER, DPMC/MaNEP, University of Geneva, Switzerland — We present the first scanning tunneling spectroscopy study on the Chevrel phase PbMo_6S_8 , an extreme type II superconductor with a coherence length only slightly larger than in high- T_c cuprates. Tunneling spectra measured on atomically flat terraces are spatially homogeneous and show well-defined coherence peaks. The low-energy spectral weight, the zero bias conductance and the temperature dependence of the gap are incompatible with a conventional isotropic s -wave interpretation, revealing the presence of low-energy excitations in the superconducting state. We show that our data are consistent with the presence of nodes in the superconducting gap.

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