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STS study on single crystal of noncentrosymmetric superconductor PbTaSe2 ZHIYANG YE, RUI WU, Institute of Physics, Chinese Academy of Sciences, Beijing. Department of Physics and Texas Center for Superconductivity, University of Houston., JIHUI WANG, Department of Physics and Texas Center for Superconductivity, XUEJIN LIANG, HANQING MAO, LINGXIAO ZHAO, GENFU CHEN, Institute of Physics, Chinese Academy of Sciences, SHUHENG PAN, Department of Physics and Texas Center for Superconductivity, University of Houston. Institute of Physics, Chinese Academy of Sciences, Beijing — We report our low temperature scanning tunneling spectroscopic study on single crystals of noncentrosymmetric superconductor PbTaSe2. On the background of the normal state tunneling spectrum, a superconducting energy gap opens at a temperature below the bulk Tc = 3.7K. At t = 1.4K, the gap magnitude is estimated to be about 1meV. This energy gap is particle-hole symmetry and is homogeneous in space. Extrapolating the low energy part of the spectrum, we find that the low energy part of the gap spectrum is linear like "V" shape. We will present the results of the numerical fit with various gap functions of proposed possible pairing symmetry. We will also present our preliminary results of the magnetic field dependence measurement and discuss the implications of these observations.

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