

Abstract Submitted  
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**Superconducting and vortex properties of the  $\beta$ -pyrochlore  $\text{KOs}_2\text{O}_6$  probed by scanning tunneling spectroscopy** CÉDRIC DUBOIS, Dept of Materials Science and Eng., M.I.T., U.S.A., GILLES SANTI, ØYSTEIN FISCHER, DPMC/MaNEP, University of Geneva, Switzerland — The pyrochlore superconductor  $\text{KOs}_2\text{O}_6$  was studied by scanning tunneling spectroscopy in both the Meissner and vortex states. In view of the controversy concerning the gap symmetry in this material, several symmetry scenarii were tested against our measured spectra. We find that a very anisotropic (40%) s-like gap accounts best for the measured data. This could be interpreted as the signature of a singlet-triplet mixed state allowed by the absence of inversion symmetry in this compound. Vortices were observed for both magnetic fields considered (2 and 6 T) and were arranged in a hexagonal lattice. From the decay of the zero bias conductance away from the vortex cores, we obtain coherence lengths around 3–4 nm, in line with previous estimates based on  $H_{c2}$ .

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