

Abstract Submitted  
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**Zero bias anomaly in the low-temperature scanning tunneling spectra of Sr<sub>3</sub>Ru<sub>2</sub>O<sub>7</sub>**<sup>1</sup> R. MATZDORF, B. NANSSEU, J. HAGER, Institute of Physics, University of Kassel, 34109 Kassel, Germany, H. YAGUCHI, Y. MAENO, Kyoto University, Japan, J. ZHANG, Department of Physics, Florida International University, Miami, Florida 33199, USA, R. MOORE, E.W. PLUMMER, Condensed Matter Science Division, Oak Ridge national Laboratory, Oak Ridge, Tennessee 37831, USA — We have studied a zero bias anomaly in scanning tunneling spectra of Sr<sub>3</sub>Ru<sub>2</sub>O<sub>7</sub> as function of temperature. The dip-like feature in the dI/dV spectra is observed in an energy range of  $-20\text{meV}$  to  $+20\text{meV}$  around Fermi energy. The depth of the dip decreases with increasing temperature in a temperature range of 5 to 30 Kelvin. The temperature dependence of the dip is not due to the thermal broadening connected to the tunneling process. The results on Sr<sub>3</sub>Ru<sub>2</sub>O<sub>7</sub> are compared with temperature dependent scanning tunneling spectra of Sr<sub>2</sub>RuO<sub>4</sub>. Finally, we discuss different effects as possible explanations for the zero bias anomaly.

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