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Heavy fermion phases probed by temperature dependent tunneling spectroscopy ANA MALDONADO, Laboratorio de Bajas Temperaturas, Departamento de Fisica de la Materia Condensada, Universidad Autonoma de Madrid, 28049 Madrid, Spain, ISABEL GUILLAMÓN, H. H. Wills Physics Laboratory, University of Bristol, Tyndall Avenue, Bristol BS8 1TL, UK, JOSE GABRIEL RODRIGO, HERMANN SUDEROW, SEBASTIÁN VIEIRA, Laboratorio de Bajas Temperaturas, Departamento de Fisica de la Materia Condensada, Universidad Autonoma de Madrid, 28049 Madrid, Spain, DAI AOKI, JACQUES FLOUQUET, INAC, SPSMS, CEA Grenoble, 38054 Grenoble, France — Heavy fermions offer a rich physical phenomenology at very low temperatures, exhibiting different phase transitions on cooling that determine their electronic properties. Their ground states cover many electronic interactions, such as Kondo effect, superconducting or long range magnetic ones and, eventually, their coexistence. Thus, exploring the local electronic properties of these systems using scanning tunneling microscopy/spectroscopy (STM/S) at different temperatures is essential. In this communication, tunneling spectroscopy measurements using a superconducting tip of Al in the superconducting phase of URu_2Si_2[1] and using one of Au in the paramagnetic and antiferromagnetic phases of, respectively, $CeRu_2Si_2$ and $CeRh_2Si_2$[2] will be discussed. The features found in the tunneling spectroscopy of each compound at 0.15K and their respective thermal evolution reflect the formation of different electronic ground states.

[1]A. Maldonado et al., *Phys. Rev. B* **85**, 214512 (2012)
[2]A. Maldonado et al., Accepted in *J. Phys.: Condens. Matter*

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