

### **T3\_105 MEASURING AND ANALYZING THE RESISTIVITY BREAK DOWN OF HIGH TEMPERATURE**

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The behavior of resistivity versus temperature of superconductors above and below the critical temperature give the opportunity to characterize and differentiate the different superconductors, to explore their phenomenological properties, as the hysteresis one or the broadening of the resistive transition in presence of external magnetic field, to test microscopic model extracting relevant information on the processes governing the superconductive phase. Performing Hall coefficient measurements it is possible, moreover for instance characterize the non-Fermi liquid behavior of some High temperature superconductors. Using the USB probe developed in the European project MOSEM we are able to explore the phenomenological behavior of superconductors also in a didactic laboratory. The resistive transition is well characterized recognizing for instance the sharp but hysteretic behavior in low fields, the appearance of one or more shoulders (vortex slush). Other opportunities offered by the system are the exploration of the broadening of the previous features in applied magnetic fields (Lorentz force driven dissipation) and the appearance of a paramagnetic-ferromagnetic transition.