

Abstract Submitted
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Instrumentation for Calorimetric Measurements of Strongly Correlated Electron Materials ULISES URBINA, PEI-CHUN HO, Department of Physics, California State University, Fresno — A calorimeter is used to make measurements of the internal energy of a material in order to probe its thermodynamic properties such as crystalline lattice stiffness, electronic effective mass, phase transitions' and entropy. Rare-earth metallic compounds are of interest in our lab because they are known to exhibit strongly correlated electron behavior, which gives rise to interesting phenomenon such as conventional and unconventional superconductivity, metal-insulator transitions, magnetism and the magnetocaloric effect. Therefore, the temperature dependence of specific heat is an important quantity to investigate these materials. With limited space of our cryogenic system we are unable to use a traditional semi-adiabatic method, instead; we use a thermal relaxation method for our calorimetric measurements. A discussion on the construction of the calorimeter will be presented.

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