A new approach to the measurement of relaxation heat capacity.\textsuperscript{1}

JONATHAN B. BETTS, ALBERT MIGLIORI, IZABELA STROE, National High Magnetic Field Laboratory, Pulsed Field Facility, LANL, Los Alamos, NM 87545, SCOTT RIGGS, National High Magnetic Field Laboratory, DC Field Facility, Tallahassee, FL 32310 — We have developed low-addenda calorimeters for the 300mK – 380K temperature range. The low addenda produces a calorimeter relaxation response with exceptionally low scatter, typically less than one part in 1000. Such low scatter exposes small errors in the usual logarithmic variation of temperature with time, and because of the low scatter, small corrections to this function can be made consistently, increasing our heat-capacity precision by an order of magnitude. We also present a calorimeter design for measuring small micro-liter liquid samples using the relaxation method in the 300K – 400K temperature range.

\textsuperscript{1}This work was carried out under the auspices of the National Science Foundation and the US Department of Energy.