Abstract Submitted
for the MAR07 Meeting of
The American Physical Society

Dirty Peierls transition to stripe phase in manganites SUSAN COX, National High Magnetic Field Laboratory, Los Alamos National Laboratory, JASON LASHLEY, EDWARD ROSTEN, Los Alamos National Laboratory, ANTHONY WILLIAMS, CSEC, University of Edinburgh, JOHN SINGLETON, National High Magnetic Field Laboratory, Los Alamos National Laboratory, PETER LITTLEWOOD, Cavendish Laboratory, University of Cambridge — The nature of the phase transitions in $La_{0.48}Ca_{0.52}MnO_3$ and $Pr_{0.48}Ca_{0.52}MnO_3$ has been probed using heat capacity and magnetisation measurements. The phase transition associated with the onset of the stripe phase has been identified as a second order transition which can be very well fitted by the model of a Peierls transition in a disordered system (a 'dirty' Peierls transition). We demonstrate that this model can also be applied to other systems (such as alpha- Uranium) in which Peierls transitions occur.

Susan Cox
National High Magnetic Field Laboratory,
Los Alamos National Laboratory

Date submitted: 28 Nov 2006 Electronic form version 1.4