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Elastic collapse and avalanche criticality near a Mott transition[1]
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— We study some dynamic aspects of a Mott transition in a rare-earth alloy $Ce_{0.90}Th_{0.10}$ by resonant-ultrasound spectroscopy (RUS), electrical-transport, and thermal-expansion measurements. In the temperature range spanning the first-order transition, we observe a stiffening of the elastic response that is associated with a continuous front propagation (*e.g.* solitons). A defining characteristic of a mixed phase regime, slow scanning rates (0.01 K/min) show these solitons to be superimposed with jerks and avalanches in all three data sets: RUS, resistivity, and thermal expansion data. Analysis of the avalanche data give power law distributions with critical exponents $P(E) = E^n$ for energy, in the case of thermal expansion data and length, in the case of electrical transport data.

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