

Abstract Submitted
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A Quadrupole Momentum Thermometer for Heavy-Ion Reactions LARRY MAY, Department of Chemistry and Cyclotron Institute, Texas A&M University, ALDO BONASERA, Cyclotron Institute, Texas A&M University and INFN Laboratori Nazionali del Sud, Catania, Italy, SARA WUENSCHHEL, SHERRY YENNELLO, Department of Chemistry and Cyclotron Institute, Texas A&M University — Various thermometers have been used to measure nuclear temperature in the context of probing the proposed nuclear liquid-gas phase transition. A recently developed thermometer derived from quadrupole fluctuations is explored. Effects on the temperature of including ground-state nuclear spins and corrections for collective motion are described. The thermometer was derived using classical Maxwell-Boltzmann statistics and an alternative Bose-Einstein correction has also been applied and tested for bosonic nuclei. Inclusion of ground-state spins in the calculation improves the agreement of the temperatures between different fragment particle types.

Larry May
Dept of Chemistry and Cyclotron Institute, Texas A&M University

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