

Abstract Submitted  
for the APR08 Meeting of  
The American Physical Society

**Relativistic Thermodynamics: Theory and Computer Experiment** CONSTANTIN RASINARIU, Columbia College Chicago — A thermodynamic system in uniform translation appears to a stationary observer to be a) colder  $T = T_0/\gamma$  according to Planck and Einstein (1907), or b) hotter  $T = T_0\gamma$  according to Ott (1963), where  $\gamma = (1 - v^2/c^2)^{-1/2}$ . The heated debate regarding the laws of transformation for the relativistic quantities is yet to be settled. In this paper I address the relativistic law of transformation of the temperature from the perspective of imposing the relativistic covariance of the fundamental laws of thermodynamics. Also, I report results from computer simulation of fully relativistic 2- dimensional molecular dynamics. I conclude that Jüttner distribution is well reproduced experimentally and I investigate the relativistic law of transformation of the temperature.

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Date submitted: 14 Jan 2008

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