Abstract Submitted
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A generalization of equipartion and virial theorems: maximum entropy derivation[1] GONZALO GUTIERREZ, SERGIO DAVIS, Departamento de Fisica, Facultad de Ciencias, Universidad de Chile — It is shown that, for a continuous maximum-entropy distribution obtained from an arbitrary number of simultaneous constraints, an estimator for a given conjugate variable can be constructed. Thus, we have derived a general theorem connecting the values of Lagrange multipliers in Maximunm Entropy (MaxEnt) inference to expectation values related to an arbitrary trial function. These estimators provide another tool to widen the applicability of Jaynes' formalism (E. T. Jaynes, Phys. Rev. 106, 620 (1957)), as well as insight into the interpretation of the hypervirial relations known in Statistical Mechanics for the canonical ensemble and Rugh's dynamical temperature for the microcanonical ensemble (H. H. Rugh, Phys. Rev. Lett. 78, 772 (1997); G. Rickayzen and J. G. Powles, J. Chem. Phys. 114, 4333 (2001)). Some examples to show the applicability of these new relations within and beyond standard Statistical Mechanics will be presented.

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