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**Large-Scale Quantization and consequences in statistical mechanics** GEORGE LIVADIOTIS, Southwest Research Institute, USA — Recent developments revealed the existence of a new quantization constant  $\hbar_*$ , similar to the Planck constant  $\hbar$ , but  $\sim 12$  orders of magnitude larger. Planck's constant constitutes the smallest possible phase-space parcel *for individual and uncorrelated particles*, while the new quantization constant describes the smallest possible phase-space parcel *for collisionless particle systems characterized by collective behavior and local correlations*. The majority of space plasmas throughout the heliosphere are such systems, but any other type of systems exhibiting collective behavior and correlations between their particles can be characterized by the large-scale quantization. Here, we discuss the consequences of this alternative phase-space scale to statistical mechanics. The generalization of the old-known Sackur-Tetrode entropic formulation for systems with local correlation is such an example.

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