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**Disequilibrium, thermodynamic relations, and Rényi's entropy.** (English) Zbl 1372.94373  
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Summary: The disequilibrium concept ( $D$ ) was introduced by López-Ruiz, Mancini, and Calbet 20 years ago together with their successful notion of statistical complexity. In this note, we show that, in a classical, canonical-ensemble environment,  $D$  displays interesting thermodynamic properties and is able to replace the partition function. Also, we show that for a generalized statistical complexity-family that involves Rényi's entropy of order  $q$ , the maximal value of these new complexities is attained in the case  $q = 1$ .

**MSC:**

**94A17** Measures of information, entropy  
**82B05** Classical equilibrium statistical mechanics (general)

Cited in 1 Document

**Keywords:**

disequilibrium; canonical ensemble; Rényi's entropy

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