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Entropy and Information Inequalities

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Deadline for manuscript submissions: closed (30 November 2018)

Message from the Guest Editors

In recent decades, information theoretic inequalities have provided an interface with both neighboring and seemingly disparate disciplines. What is more, bridges built from these interactions have produced new and richer understandings of Information theory itself. Important connections have been established between information theoretic inequalities and subjects including, convex geometry, optimal transport, concentration of measure, probability. statistics. estimation theorv. additive combinatorics, and thermodynamics, bv way of inequalities; entropy power, Brunn-Minkowski, HWI, log-Sobolev, monotonicity in CLT, Sanov, sum-set, Landauer, and many more. Even within information theory, there has been renewed interest in developing inequalities in nonconventional settings such as convolution inequalities for Renyi or Tsallis entropy, inequalities for f-divergences, and entropy inequalities over discrete spaces.

In this Special Issue, we would like to invite contributions that establish novel information theoretic inequalities (broadly defined), extend the applications thereof, and deepen our understanding of information theory and related fields.









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Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

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