Special Issue

Ising Model—100 Years Old and Still Attractive

Message from the Guest Editor

Intended to describe ferromagnetism, the Ising model was actually proposed in 1920 by the physicist Wilhelm Lenz. Although initial analysis by Ernst Ising was a bit disappointing, subsequent studies lead to enormous research activity and myriads of modifications. After a century of intensive studies the Ising model remains a powerful tool for describing a wide range of interacting many-body systems, even outside the realm of physics. Various applications include opinion formation, social network analysis, and econophysics, as well as computer sciences, computational biology, and neuroscience. In the era of big data and artificial intelligence, the Ising model is poised to continue drawing scientists' attention for quite some time. The objective of this Special Issue is to collect papers that describe recent results related to the Ising model or introduce original techniques for its analysis. Papers that explore novel areas of applications of Ising models are also welcome.

Guest Editor

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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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