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Complex Networks Dynamics Modeling - Entropy of network ensembles

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Abstract: The quantification of the complexity of networks is, today, a fundamental problem in the physics of complex systems. A possible roadmap to solve the problem is via extending key concepts of information theory to networks. In this talk we discuss recent works defining the Shannon entropy of a network ensemble and evaluating how it relates to the Gibbs and von Neumann entropies of network ensembles. The quantities we introduce here play a crucial role for the formulation of null models of networks through maximum-entropy arguments and contribute to inference problems emerging in the field of complex networks.

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