Random-Walk Networks

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Abstract

In this poster we present a detailed study of random-walk networks behavior. RWN are a generalization of the well-known random Boolean networks RBN's, a classical approach to the study of the genome. RWN's are also discrete networks, but their response is defined by small variations in the state of each gene, thus being a more realistic representation of the genome and a natural bridge between discrete and continuous models.

RWN's show a clear transition between order and disorder. Here we explicitly deduce the formula of the critical line for the annealed model and compute numerically the transition points for quenched and annealed models. We show that RBN's and the annealed model of RWN's act as an upper and a lower limit for the quenched model of RWN's. Finally we calculate the limit of the annealed model for the continuous case.