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基于BA模型高团聚性网络构造

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Networks with High Clustering Coefficients Based on BA Model

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摘要 介绍了复杂网络，指出BA模型在刻画真实网络上的不足，即团簇系数不高.在BA模型的基础上引入加边机制，提出了一种改进模型.数值模拟结果表明：在改进模型中，网络在保持BA模型无标度性质的同时，具有较高的团簇系数；网络的团簇系数C随改进模型中加边概率p的增大而增大，当p=1时，网络的团簇系数比同等规模的BA模型提高了约100倍.

关键词： 复杂网络   团簇性   加边   无标度

Abstract: The authors discuss briefly some properties of the BA model and point out that such model is insufficient to describe real networks for its relatively small clustering coefficient.Based on the BA model,and introducing edge addition into network evolution,the authors propose a modified network model.Numerical simulation results indicate that in the modified model,the networks are scale-free,just as the networks in the BA model.In addition,the networks in such model are highly clustered.It is shown that the clustering coefficient C of network increases with the increase of edge-addition probability p in the modified model.In particular,when p=1,C is found to be 100 times higher in the modified model than that in the BA model with the same network-size.

Key words: complex networks   clustering   edge addition   scale-free

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