5. CONCLUSIONS

Community structure is a significant feature in complex networks. The characteristic of community in which nodes have the same attribute is widely used in various fields, and abundant results have been obtained. Therefore, many community detection methods are proposed. But these methods have intrinsic drawbacks, and it is hard to design effective methods. In order to solve this problem, we employ multi-scale view to reveal easily detectable community structure in complex networks. Experiments on both synthetic and real networks show that, for a given network, the communities must be prominent and easily detectable by single-scale methods, if these communities are strongly synchronous and if the synchronous partition falls within the stable partitions detected by multi-scale methods. The results can provide one with a detailed guide for designing community structure mining methods.

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