

Overlapping community structure and the percolation transition of community network

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Many non-overlapping community identification methods have been successfully applied in various fields, although it is known that many networks exhibit pervasive overlap where each and every node may belong to multiple communities. Here we study the percolation transition of a bipartite community model and demonstrate that there exists a region where the network is supercritical, while the network of communities is subcritical and does not exhibit much overlap. Our analysis suggests that incomplete network data explains why some networks do not appear to exhibit highly overlapping community structure.