

**[P19] Transport phenomena on complex networks**

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By measuring the betweenness centrality in minimum spanning tree(MST) of various networks, we show effect of the degree-degree correlation on the transport on the complex networks. To make MST, we assign two different types of weight to each link. From the numerical simulations, we find that the topological properties of MST significantly affected by both the degree-degree correlation and the types of weight assigned to each link. As a result, we show that the distribution of betweenness centrality, which is relevant to the transport on complex network, strongly depends on the degree-degree correlation and types of assigned weight. We also compare the results with those on Infinite Incipient percolation Cluster(IIC) which is believed as a super highway of transport in complex networks<sup>†</sup>.

<sup>†</sup> Z. Wu, *et al.* Phys. Rev. Lett. **96**, 148702 (2006).