

Modularity in Brain Networks.

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Brain networks are a way of representing the structure and function of the brain. Nodes correspond to brain regions, and edges between them correspond to similarity or correlation in measurements from experiments. Recently, it has been demonstrated that the brain networks of healthy subjects differ from those of patients diagnosed with conditions like autism (Rudie et al, 2012), schizophrenia (Lynall et al., 2010), and epilepsy (Chavez et al., 2010). One difference is in how these networks are partitioned into modules: dense subgraphs sparsely connected to one another. The overall structure of modules in a network is sometimes described by a single number: the modularity.

In this talk I will introduce brain networks and their construction. I will then present some results on the modularity and properties of modules found in the brain networks of different patient types, and what these differences can imply about our understanding of complex disorders.

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