Workshop on Clustering and Search techniques in large scale networks

Hierarchical network clustering by modularity maximization

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Community detection based on modularity maximization is currently done with hierarchical as well as with partitioning heuristics, and, in a few papers, exact algorithms. Hierarchical heuristics aim at finding a set of nested partitions. They are in principle devised for finding a hierarchy of partitions implicit in the given network when it corresponds to some situation where hierarchy is observed or postulated. This is often the case, for instance, in social organizations and evolutionary processes. We discuss agglomerative and divisive hierarchical heuristics that are based on modularity maximization. We overview some known heuristics and discuss a few examples.