Models and Algorithms for Dynamic Networks

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In many modern applications we can record interactions that appear and disappear over time. This type of dynamic network arises, for example, in on-line human behaviour (emails between individuals), in transport (flights between cities) and in city sensors (correlations between measurements). Some of the key concepts from traditional network science must be adapted or generalized in this dynamic setting. In this talk I will focus on (a) a modelling framework that allows us to quantify and test hypotheses from the social sciences and (b) an approach to monitoring node centrality that has proved useful on very large social media networks. Results will be illustrated on real data sets.