Universität Konstanz

Data Science for complex networks and dynamical systems

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Network-based modelling of complex systems and data has become an essential topic across a range of different disciplines, ranging from the natural sciences over engineering to the social sciences. Indeed, network properties can be used to determine important nodes, reveal the modular structure of a system, or — if each node is a dynamical unit — elucidate collective network dynamics such as the spread of (mis)information in a system. In this talk, I will present some examples from our current research of how network analysis can contribute to the understanding of complex systems and large data sets: for instance, how can we detect modular structure in networks if we can only observe a dynamical process on the nodes of a network, but are not able to see the edges of the network?

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