

Dynamics of Complex Networks: Modeling, Control and Identification using Advanced Algorithmic Techniques

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In this talk we will reflect upon the role of the data science expert and disciplinary expert in advanced settings of planning and control in complex networks. What are contemporary network models and their properties? What lessons can be learned from spectral and modularity analysis? How to optimally control viral processes (information, diseases)? How to identify network structure, infer states, and causal chains?

The overview will focus on recently discussed results in processes related to the viral spread of information in social media and of infectious diseases. The ambition is to shed a light on what the contribution of Complex networks science can be, but also what fundamental algorithmic limitations might be encountered.