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Information Diffusion on Dynamic Networks

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The study of how information spreads throughout social systems has long been studied by a wide variety of fields. In that context, recent empirical evidence indicates that complex contagion (a situation where individuals revise their behaviour by taking into consideration those of their friends, which, jointly with the complexity of the diffusing information, define the likelihood of an update) happens in the diffusion of human behaviours, innovations, knowledge and opinions.

Furthermore, almost all real world networks are networks whose structure and the state of the nodes co-evolve in time or, in other words, they are adaptive. It is expected that the diffusion of information and the formation of consensus and polarisation in a specific population are affected by these type of networks.

This project will focus on the analysis of competitive scenarios (with and without intervention) under complex contagion in adaptive/dynamic social networks, in order to understand the impact that these networks have in the formation of consensus and polarisation. This analysis will consider various properties related to complex contagion dynamics, bringing together different ideas from statistical physics, network science, evolutionary game theory and opinion dynamics by shifting the focus from individuals to the properties of the diffusing processes.

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