Modeling information diffusion from empirical data

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Models about social spreading processes, such as rumours, fashions or innovations, can be divided in two main classes: the ones that only consider one source to trigger contagion (contact), i.e. epidemic-like models (see e.g. the Bass model[1] as one of the first proposals in the context of social sciences), and the ones that consider more than one source; in these models "contact" is not enough to spread the infection and additional sources are needed[2,3].

Despite the amount of theoretical models in both directions, it is not clear yet which one is more appropriate to the empirical data on social diffusion[4]. For example, how does the probability for a consumer to buy a new product depend on the number of neighbours buying this product? Is this probability larger after meeting more neighbours in social spreading? In this work, we aim to advance in our understanding of the outcome of these two basic mechanisms. For that, we propose a model inspired by the empirical data and discuss the behaviour of the system depending on the form of the adoption probability function.

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