

# Modeling collections of networks by stochastic block models. Application in ecology and sociology.

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**Abstract:** Networks, which allow to represent a set of interactions within a system, are widely used in molecular biology, ecology, sociology... Stochastic block models, which are based on a classification of nodes according to their role in the network, make it possible to learn the macroscopic structure of networks and thus to obtain a summarized image of them. In recent years, it has become necessary to study not one but several networks together. After introducing the stochastic block model, I will present some recent works on the modeling of collections of networks and illustrate my point with examples from ecology.