

Dear Editor,

Thank you for the opportunity to submit our manuscript *Stochastic Block Models with Multiple Continuous Attributes* to this special issue on community detection in *Applied Network Science*.

We have been in direct contact with Hocine Cherifi, who approved our sending in this paper as a candidate for the special issue, without prior submission of a one-page summary, since we are submitting prior to the summary deadline.

In our manuscript, we extend the widely used stochastic block model to networks where nodes have multiple continuous attributes. In particular, we specify a new probabilistic model that enables joint consideration of node attributes and connectivity patterns to identify communities in the network. We then show how our fitted *attributed stochastic block model* can be applied in a novel way for link prediction and collaborative filtering problems on a network. We demonstrate the usefulness of our model in these two tasks by fitting the attributed stochastic block model to a protein-protein interaction network and a microbiome subject similarity network. Our work suggests that such an approach is useful for integrating complementary types of biological information.

The work in this manuscript was inspired by a recent number of papers that explore how to best use node attribute information in community detection. Our work has a unique perspective in that it jointly learns a probabilistic model for connectivity and attribute information and it specializes in handling continuous attributes.

Thank you for your consideration.

Best,

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(for all authors)