

Abstract

Among the various topics of network analysis, detecting and modelling community structure is one of the most fundamental ones. Many algorithms for community detection have been proposed but most of them do not work well on large or sparse networks. A recently proposed pseudo likelihood method gives good performance after being tested on networks, including large and sparse ones, simulated by stochastic block models. However, we find this testing process unconvincing as the algorithm itself is also built upon the stochastic block models. In this report, we review the pseudo likelihood algorithm, re-evaluate its performance using networks generated by a different but more realistic LFR model, and compare the outcome with that obtained by testing on stochastic block models. We conclude that the pseudo likelihood algorithm indeed gives consistent estimates of the community structure.