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Dynamic networks community detection via low rank component recovery of adjacency matrices WEI BAO, GEORGE MICHAILIDIS, University of Michigan, Ann Arbor — Dynamic community detection in networks has been of high interest due to its various applications. In this work, we apply low rank extraction technique on adjacency matrices to approximate the community structures. Not only can we accurately identify the phase transition time points where significant changes in the community structures occur, but also we can increase the accuracy of the core community structures recovered in the peace time ranges by averaging the low rank components. A systematic methodology has been proposed as how to accomplish the target. Factor model, and stochastic block model (including weighted scenario) have been tested for the robustness of our model. Besides, applications on both Kuramoto model and US Senate Roll Call data are also carried out and interesting results are obtained.

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