Recent topics in social temporal network analysis

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Abstract:

Some empirical data of social interactions between individuals over time, "who interact with whom at when", have become available for research purposes (with the consent of subjects) and keep drawing the attention of research community to the study of temporal networks, an extension of complex networks including time. Firstly, research interests were mostly in the similarity of statistical properties in different social settings, such as distributions of inter-contact times. Recently, one of main research focuses is moving to higher-order properties such as temporal correlations of activities. In this talk, we review this path of previous researches to point out three representative features of social temporal networks observed in common. In addition, as an example of analysis of higher-order properties, we introduce our recent work on application of spike train analysis methods to social communication data. Our analysis suggests difference in the response behavior of individuals when using different communications tools, such as cell phone calls, short messages, or emails.