Network approaches to characterize spatiotemporal clustering

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Many systems in nature are dominated by processes that can be portrayed as clusters of localized events. One particularly important example is seismicity where the localized events correspond to earthquakes.

In this talk, I will present an overview of different network approaches which allow one to characterize the spatiotemporal structure of clusters of localized events. In the case of earthquakes, I will show that these methods can be useful to extract information about the underlying microscopic dynamics. Moreover, some of these methods also allow one to define aftershocks. While the particular focus is on seismicity, many of methods I will review are directly applicable to other geophysical systems as well.