

On statistical declustering of global earthquake catalogue

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Declustering of global earthquake catalogue into mainshocks, foreshocks and aftershocks is an important problem on its own, particularly for studying patterns of global seismicity. Declustering often leads to better understanding of not just mainshock-aftershock relationship, but also swarms, bursts, gaps, switching, and their distributions which can be key to various data-driven discoveries. There is a large body of literature on statistical declustering of earthquakes. In this talk, we will look into the question of magnitude, space and time interaction among mainshocks using nearest neighbor clustering method. We will also discuss point process models for declustering of global earthquake data and potential computational and other challenges.

Keywords: Scale-free networks, Mixture model, Point process