Detecting space-time seismicity variation by using maximizing local likelihood and the ETAS model

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Detecting spatiotemporal variation of the seismicity parameters characterized in the ETAS model can be done through Bayesian smoothness prior as done by Ogata (2004, JGR, V109, B03308). However, this procedure include heavy computations such as high dimension ICCG and numerical integrations. With a bit loss of objectiveness, this presentation gives an alternative way of estimating the change of the ETAS parameter in space and time by using the maximum local likelihood estimates (MLLE). This method is applied to the earthquake data from the Boso Peninsula (140.0^o ~141.5^oE, 34.5^o~360.0^oN).