

Seismic Network Detection Threshold in Flinn-Engdahl Seismic Regions

The detection capability of the seismic network of the International Monitoring System (IMS) operated by CTBTO can be quantified in terms of a threshold that measures the magnitude of the smallest seismic event that could occur at a location and have a specified probability of being detected and located. This threshold can be inferred from the results of bulletins produced by the International Data Centre (IDC). It may also be predicted by computer codes that take descriptions of the properties of seismic stations and calculate signal detection thresholds at individual and multiple stations. Network detection threshold is inevitably non-uniform across the globe and the accuracy with which this variation can be modelled is of interest to IDC. A method is described in which network detection threshold is studied in Flinn-Engdahl seismic regions. Thresholds are predicted by the NetSim network simulation code and inferred from the contents of IDC bulletins. The reasons for differences between predicted and inferred values are discussed. The views expressed are those of the authors and do not necessarily reflect the view of CTBTO Preparatory Commission.

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