



## **Evaluation of NET-VISA association and location performance using Ground Truth events and RSTT model based SSSCs**

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The CTBTO's International Data Centre is in the final phase of implementing NET-VISA to perform the automatic association and location steps in the next generation IDC software. NET-VISA (Arora et al., 2013) applies a Bayesian approach with a forward physical model using probabilistic representations of the propagation, station capabilities, background seismicity and noise statistics to obtain the maximum probability a posteriori solution to the highly nonlinear problems of phase association and event location. One of the new features in NET-VISA is the capability of using model-based Source-Station Specific Corrections (SSSCs) to account for the 3D structure of the upper mantle and crust during the association process.

In this study, we assess the NET-VISA association and location performance with and without using SSSCs by comparing the results to established event bulletins and Ground Truth (GT0-5) event locations curated by the International Seismological Centre (ISC) as well as locations obtained with the iLoc (Bondár and Storchak, 2011) software. iLoc is enabled to use travel times computed from the global 3D upper mantle model Regional Seismic Travel Times (RSTT; Myers et al., 2010), while the REB locations use empirical correction tables.

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