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RSTT Model Validated with the Events and Stations in Egypt

The International Monitoring System (IMS) of the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) will ultimately have 170 seismic stations for the purpose of monitoring underground nuclear explosions, in which about 80 percent are currently running. The seismic event location will play an important role in the monitoring process and the accuracy of location is important to the success of the On-site Inspection operation. The Regional Seismic Travel Time (RSTT) modelling approach (described by Myers, et al., 2009) provides a path toward reducing location uncertainty. IDC has performed validation tests on events from Europe, Asia, and North America. In areas where there is little ground-truth, validating the RSTT model can be done by examining location results from well covered regional networks. Regional seismic travel times from 16 events, well recorded by the Egyptian National Seismological Network (ENSN) and IMS in Egypt in the period from 1999 to 2011, were gathered. The events were located using different travel-time models (IASPEI91, AK135 and JB). Travel time residuals compared with travel time corrections from RSTT model indicate the best model for the events in Egypt.

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