ID: Type: **Oral**

Seismic Travel Time Evaluation, Training and Outreach

The Regional Seismic Travel Time (RSTT) model reduces travel time prediction errors for phases (Pn, Pg, Sn, and Lg) which are commonly used for seismic event location. Reduction of travel time prediction errors leads directly to reduction of epicenter location errors, and accurate event location is critical to Comprehensive Nuclear-Test-Ban Treaty (CTBT) verification. The Provisional Technical Secretariat (PTS) and several CTBT States Signatories have conducted tests of RSTT on the International Data Centre (IDC) system and found that epicenter errors are measurably reduced when the location data set consists of more than approximately 20% regional phases, i.e., events with seismic magnitude equal to and less than approximately 4. Further tests indicate that RSTT does not adversely affect the IDC association algorithm, demonstrating that implementation of RSTT at the IDC would be a net benefit to the system. The PTS has incorporated RSTT into international training since 2012. Twelve PTS training and professional-meeting special sessions have featured RSTT. The presentation will review RSTT international collaborations and detail the effort to establish RSTT as a standard for the calculation of regional seismic travel times.

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Track Classification: 5. Monitoring for Nuclear Explosions in a Global Context