ID: Type: **Oral**

2011 Izhevsk explosions: analysis of an REB seismo-acoustic event cluster

At ~19:50 UTC on 02-June-2011, the first explosion in a cannonade over a period of four hours occurred at a munitions depot near Izhevsk, Russia. Nine events are reported in the REB: six are seismo-acoustic events and three are infrasound-only. Analysis of these results has implications for IDC processing in three key areas: 1) detections - the importance of whether auxiliary data are available at the IDC, 2) association - e.g., an azimuth defining arrival with a time residual >1200 s, and 3) location - inadequate celerity-range model and using single three-component seismic stations as azimuth defining. Arrivals from the event cluster are observed both with the prevailing stratospheric wind (at IS43 (972 km), IS26, IS48 and at IS42, almost 6000 km away) and against it (at IS31 (762 km)). The celerities at IS43 are fast (~0.34 km/s) and are associated with a weak stratospheric duct. Over the four hour period IS43 waveforms are shown to be stable through cross-correlation using the first event as a template. Comparing these cross-correlation results with cross-correlation results for ARU (the closest seismic station, 337 km) leads to many more event detections.

Primary author: NIPPRESS, Alexandra (AWE Blacknest)

Presenter: NIPPRESS, Alexandra (AWE Blacknest)

Track Classification: Analysis of Sources and Scientific Applications