ID: Type: **Poster**

waves generated by chemical explosion at Tian Jin Port, China on 12 August 2015

A large explosion occurred in Tianjin Port, China on 12 August 2015, as a result of an ignition of hundreds tons of explosive material (ammonium nitrate). The explosion generated large amplitude infrasonic signals that were recorded at range of 3.5km-800km. We present an analysis of data using 7 infrasound stations and 3 seismic stations. The infrasound station TJB recorded the infrasonic wave with velocity of 0.747km/s at range of 3.5km from explosion center, which indicates that the wave is blast wave. For the wave traveling longer distance, the velocity of other stations decreases to normal sound speed in atmosphere. The phenomenon of coupling between seismic wave and infrasonic wave from the explosion: seismic wave coupled by local infrasonic wave also was detected in ZJK station (distance 240km) , while infrasonic wave coupled by seismic wave with velocity of 3km/s was detected in BJ stations (distance 150km). The infrasound source localization indicated that these infrasonic waves were probably from explosion center with minimal location error of 15km.

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Track Classification: 5. Analysis of Sources and Scientific Applications