ID: Type: **Oral**

Dynamics of Atmosphere and Infrasound Monitoring

The atmosphere is a complex system submitted to disturbances in a wide range of scales, including high frequency sources as earthquakes, volcanoes, thunderstorms, tornadoes, explosions and at larger scales, gravity waves from deep convection or wind over mountains, atmospheric tides and planetary waves. All these waves propagate in the different atmospheric layers submitted to different temperature and wind systems which strongly control the wave propagation. The infrasound stations of the IMS (Infrasound Monitoring System) developed for the verification of the CTBT (Comprehensive nuclear-Test-Ban Treaty) showed a high capacity to detect, localize and identify most of the disturbances of the atmosphere. As infrasonic waves propagate up to thermospheric altitudes, they are sensitive to the large scale waves opening a new field for atmospheric remote sensing. The precision of atmospheric models is not sufficient today to explain all observations mainly because lack of long term, high resolution measurements in the stratosphere and mesosphere. The integration of gravity and planetary waves constitutes a challenge for the development of future models of atmosphere and climate. Associations of the infrasound network with Lidar and airglow observation networks, as proposed by the European ARISE project, or dense arrays, as proposed in USA, will provide important observations of these waves and strongly contribute to these new challenging studies.

Primary author: BLANC, Elisabeth (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

Presenter: BLANC, Elisabeth (Commissariat à l'énergie atomique et aux énergies alternatives (CEA))

Track Classification: Theme 1: The Earth as a Complex System