



Anomalous propagation effects in the Mediterranean region

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Prior to the Sayarim 2011 experiments in the Mediterranean region, the state of the polar vortex in the mid-latitudes changed significantly over the course of a few days due to a Sudden Stratospheric Warming. As a result, a bidirectional stratospheric duct developed that persisted for two weeks. The stratospheric ducts are due to zonal wind jets between 40-50 and 70 km altitude. The winds sometimes reach magnitudes of 70 m/s.

We present infrasound data in which the described effect is captured with microbarom signals. As such, this work demonstrates the sensitivity of infrasound to stratospheric dynamics and illustrates that the classic paradigm of a unidirectional stratospheric duct for infrasound propagation can be broken during a Sudden Stratospheric Warming event.