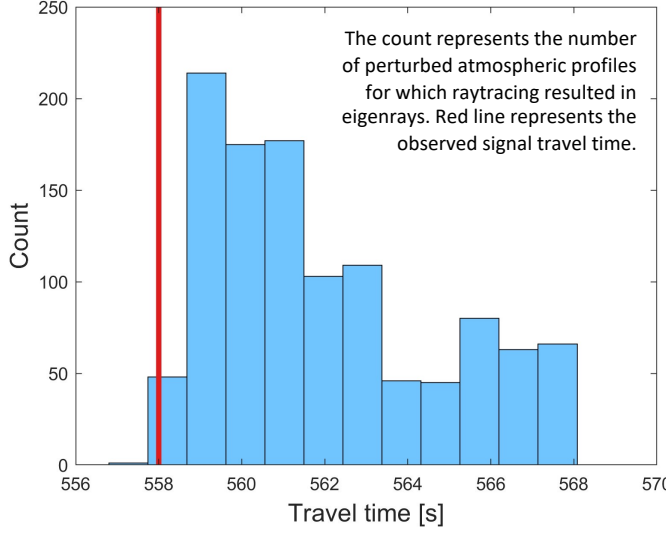
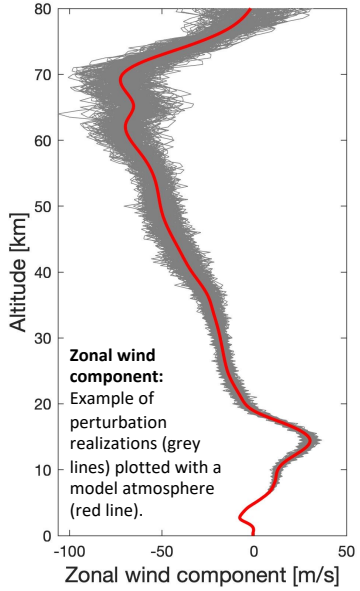
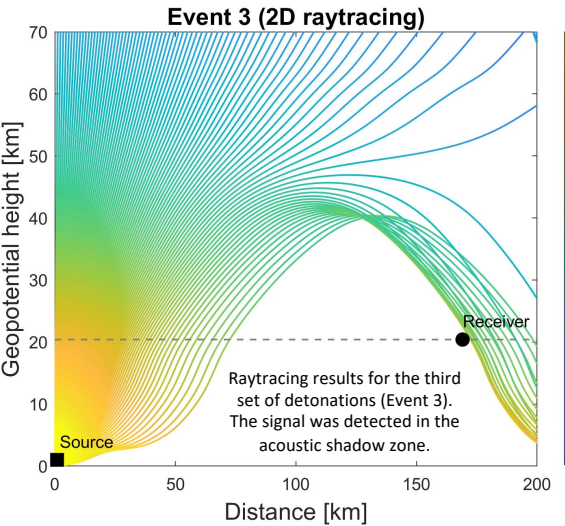


One of the signal arrivals detected while the balloon was in the predicted acoustic shadow zone.

Implementation of GW perturbations to the stratospheric wind field explained the signal detection in the stratosphere and correctly predicted infrasound travel times.



A high-altitude helium-filled balloon carrying a sensor was launched with the aim to capture infrasound generated by three pairs of controlled ground explosions in New Mexico, USA (Jul 2020).

We examined the role of gravity wave (GW) induced perturbations on infrasound propagation from the surface to an elevated receiver.

The influence of GW-induced stratospheric perturbations can be substantial for a floating receiver in the stratosphere, even at regional distances. Our results demonstrate the importance of accounting for GW structures in modeling efforts.