The solid earth, oceans, and atmosphere are coupled; often, sensors deployed in one medium record sources in an adjacent medium. A broader understanding of geophysical phenomena may be gained by interdisciplinary research using sources that excite energy into two or more media. For instance, in recent years, a large number of surface and atmospheric sources, both natural and anthropogenic, have generated infrasound energy that has been recorded at source-receiver distances up to 1000 km at the USArray, a large transportable array making its way across the United States. Such sources have included surface explosions, large bolides, mining events, and a space shuttle and have contributed to an understanding of the broad range of infrasound signals that can be recorded at seismic sensors.

More recently, infrasound sensors have been used to investigate ground shaking associated with the 7.2 El Mayor earthquake that occurred on 4 April, 2010. This event generated seismic waves felt for up to 90 seconds throughout southern California and northern Baja, Mexico. In addition, the locations of the epicenter, aftershocks, and surface rupture suggest that the rupture had a spatial extent of roughly 75 km. We have analyzed infrasound data recorded by three arrays located at distances from 200 to over 1000 km from the epicentral region and show these data corroborate the seismic interpretation of a rupture zone with a broad spatial extent. Furthermore, we hypothesize that the infrasound energy gives a rough measure of the amount of surface shaking in the source region.