Several aerospace companies are designing quiet supersonic business jets for service over the United States. Interest among earthquake warning (EQW) developers and the general seismological community in methods for discriminating and rejecting sonic booms from earthquakes is on the rise. The SonicBREWS project (Sonic Booms Research Experimental Warning System) is a collaborative effort between SonicWings Systems, Inc. and NASA Dryden Flight Research Center. The project aims to evaluate the effects of sonic booms on EQW systems.

Background
Several possible avenues exist for discriminating and rejecting sonic booms for EQW. The least robust is to shield the sensors from sonic booms. Because flight time on NASA’s F-18 research aircraft is a limited resource, we took advantage of SonicBOBS, an analysis and measurement program to test the response of high-amplitude (300 Pa) sonic booms. We will also fly three dedicated SonicBREWS flights, during which we will test specific boom cases like vertical incidence on a two-dimensional structure.

Sonic Booms on Big Structures (SonicBOBS)
Because flight time on NASA’s F-18 research aircraft is a limited resource, we took advantage of SonicBOBS, an analysis and measurement program to test the response of high-amplitude (300 Pa) sonic booms. We will also fly three dedicated SonicBREWS flights, during which we will test specific boom cases like vertical incidence on a two-dimensional structure.

Early Results from SonicBOBS
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Strategies for Rejecting Sonic Booms
Several possible avenues exist for discriminating and rejecting sonic booms for EQW. The least robust is to shield the sensors. Because flight time on NASA’s F-18 research aircraft is a limited resource, we took advantage of SonicBOBS, an analysis and measurement program to test the response of high-amplitude (300 Pa) sonic booms. We will also fly three dedicated SonicBREWS flights, during which we will test specific boom cases like vertical incidence on a two-dimensional structure.

References