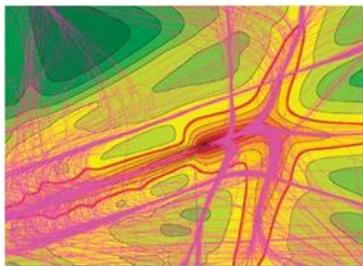


## Aircraft: Noise measurement & modeling Community noise control

**Aircraft Noise** originates from three dominant sources: aircraft systems, engine/ mechanical noise, and aerodynamic noise. Scientific medical studies abound conclude that aircraft noise clearly and significantly impairs human health. As Aerospace is an intrinsic part of modern transportation, aircraft noise analysis must be implemented for the protection of public health. We have been involved in numerous large-scale projects involving community noise impact prediction modeling; noise monitoring and flight track analysis, evaluation of airport noise monitoring systems; low-frequency community noise exposure studies; FAA INM analysis. Below we describe some of our projects relating to aircraft noise measurement and analysis.

**San Francisco International Airport Noise Study:** Comprehensive community noise exposure analysis, focusing on low frequency noise generated by aircraft take-offs with respect to the City of Millbrae community complaints. A diagnostic study was performed measuring event-based, discrete aircraft departures, community noise measurements, and aircraft noise modeling. Laboratory psychoacoustic tests were performed to analyze human annoyance factors with respect to low frequencies.



**Denver International Airport Integrated Noise Modeling (INM):** INM noise modeling performed with respect to site relocation of the Denver International Airport to Adams County. Compliance verification for government contract/ Adams county noise ordinances was investigated through noise measurement analysis and modeling.

**Seattle-Tacoma International Airport Integrated Noise Modeling (INM):** SEA-TAC contracted study to evaluate the community noise impact of the construction of a third runway. INM modeling was performed examining the differential between the existing runways and the proposed third runway. Additionally, statistical analysis was performed on the SEA internal noise modeling system, logging and archiving community noise complaints.



**Naval Air Station Oceana Noisemap Modeling:** Aircraft noise modeling was performed through Noisemap for the United States Navy and Air force. Modeling efforts focused on re-evaluation of latest operational activities of the dynamic training schedule of the US Air Force and Navy.