

Event Detection via Free Flying Stations in the Stratosphere

Infrasound stations on free floating balloons suffer little wind noise, are entirely decoupled from ground vibrations, and have a greatly extended detection range compared to those on the ground. Despite the potential advantages of such stations, few studies have addressed the research and operational opportunities afforded by free flying sensors. The last three years have seen several infrasound deployments in the free atmosphere, however, allowing in depth analysis of operational potential. Three flights were multi-hour deployments over the American southwest, one flight was a long duration circumnavigation of Antarctica, and another was an attempt to record known ground sources from the stratosphere above central New Mexico, USA. Noise levels will be compared with those of nearby ground sensors, and the general infrasound event detection capability of stratospheric stations will be assessed. Disadvantages such as variable station location, low amplitude response, and susceptibility to electromagnetic interference will be addressed as well.

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Track Classification: 2. Instrumentation