ID: Type: **Poster**

1.1-P03. An Overview of Stochastic Propagation Methods for Infrasound Studies

Propagation of infrasonic energy through the atmosphere is complicated by the dynamic and poorly resolved nature of the propagation medium. While the influence of spatial variations in the atmosphere is well understood, the presence of temporal variations has proven to be a significant challenge in applications involving propagation of infrasound through the atmosphere. This temporal variability combined with the limited resolution of measurements for atmospheric parameters (particularly above the tropopause) result in a dynamic, poorly constrained propagation medium for infrasound propagation through the atmosphere. A variety of methods have been studied to account for the resulting uncertainty including atmospheric perturbation methods and stochastic propagation models. The construction, utilization, and performance of the latter method will be discussed in detail using infrasonic signals generated by large chemical explosions in the western United States. The stochastic propagation framework will be shown to have applicability in monitoring for infrasonic events, improving infrasonic network deployments, and providing additional data streams for climatology and atmospheric transport modeling.

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