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propagation-based, stocahstic models for infrasound transmission loss - applications to yield estimation and network performance

Propagation-based, stochastic models for infrasound signal analysis were recently introduced in the context of event localization with promising results. Models for celerity-range and azimuthal variations due to cross winds have been shown to produce improvements in the accuracy and precision of infrasonic source localization estimates. Following this approach, propagation-based, stochastic models for transmission loss of signals have been constructed for applications of estimating explosive yield using infrasonic observations at propagation distances of hundreds of kilometers. Preliminary details of this stochastic yield estimation method will be presented along with an overview of a possible supplemental application to network performance modeling with aim to identify gaps in network coverage using expected seasonal variability in propagation effects.

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