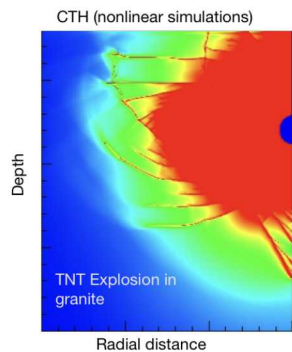


Nonlinear to Linear Modeling Toward an End-to-End Capability

SAND2020-2988PE

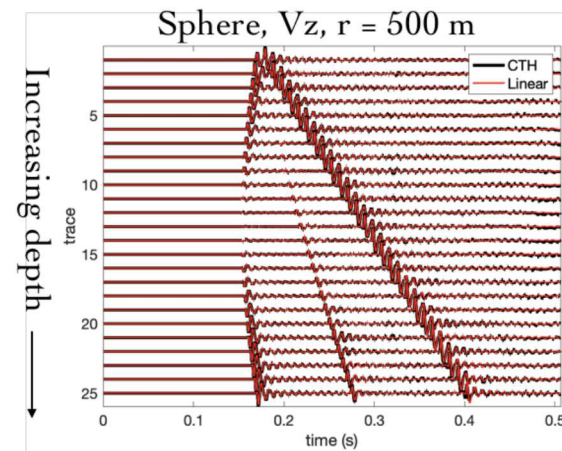
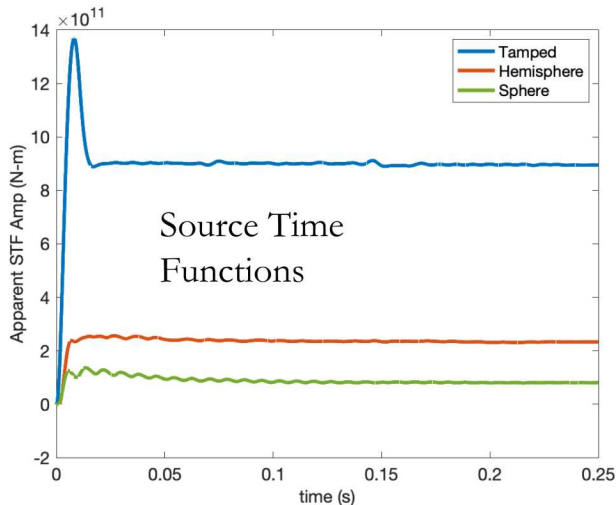
Leiph Preston, Christian Poppeliers, Mehdi Eliassi. Sandia National Laboratories

Goal: To understand the limitations and uncertainty of linear source and propagation models for nonlinear sources through stochastic earth models



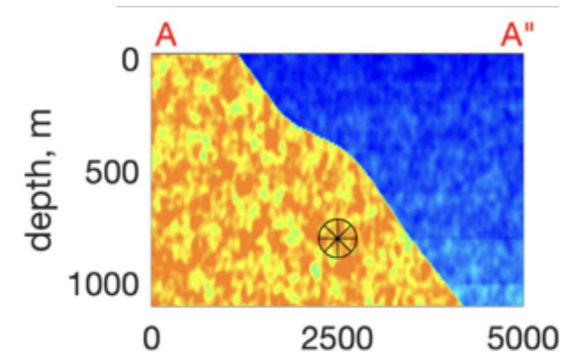
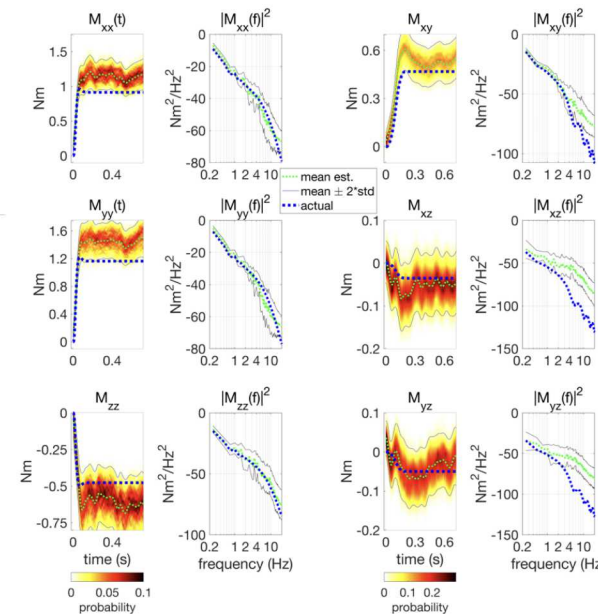
Nonlinear to Linear Modeling

- Nonlinear simulations of chemical explosions in tamped, spherical, and hemispherical cavities
- Moment tensor inversions using pure linear Green's functions match nonlinear results well



Stochastic Earth Model Effects

- Produced ensemble of stochastic earth models
- Inverted for moment tensors using all models to quantify uncertainty in solutions



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