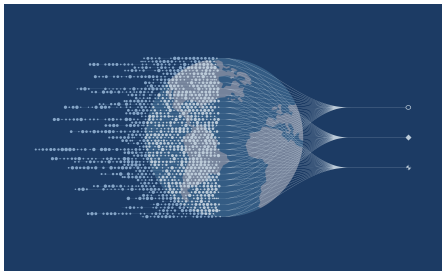

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and Depth of DPRK Explosions Inverted from Regional Seismograms Using a New Algorithm

A new method to invert regional seismograms had recently been presented to extract the yield and depth of explosions which are accompanied by contributions from both double couple (DC) and a strong compensated linear vector dipole (CLVD) source (presented in this conference by Saikia). In this paper, we are applying this approach to investigate the reliability of the yield and depth of the DPRK sources and compare the results with those published in several journal papers. Following the yield estimation and moment extractions for the CLVD and the DC sources, we combined them to construct a full moment-tensor matrix which is then analyzed using the algorithm of Tape and Tape (2019) as a representation on the Lune plot. In this study, we further investigate the effects on inferred source parameters due to the uncertainty in the velocity model, location of the explosions and the possible error in the origin times. An added aspect of this study is to test the effectiveness of this method against the method recently published that uses the Bayesian inference method (Chiang et al., 2024).

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