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Title: Explosion Yield Estimation using Machine Learning Methods

Abstract

Estimating explosion yield is a vital part of nuclear non-proliferation monitoring. Yield estimations are often computed through parametric overpressure models using waveform features extracted from low-frequency pressure waves. We will apply standardized feature extraction algorithms and implement machine learning methods for yield estimation on a collection of ~2300 pressure signals across 26 events as a proof of concept. The pressure data can be augmented to find key features for accuracy. In order to address explainability, the results will be compared with parametric yield estimation models.