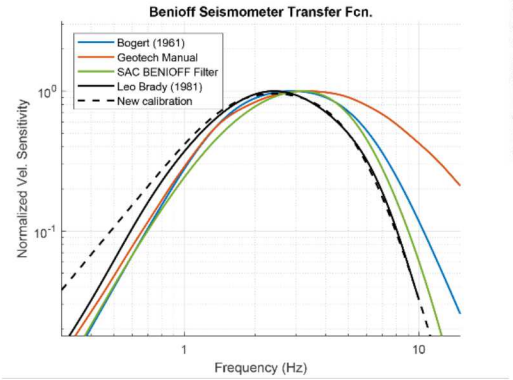
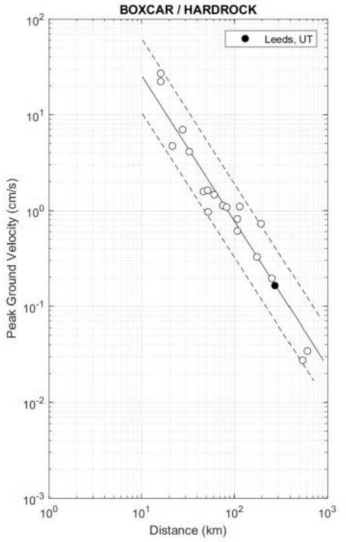
Recovery and Calibration of Leo Brady Seismic Data for the Source Physics Experiment

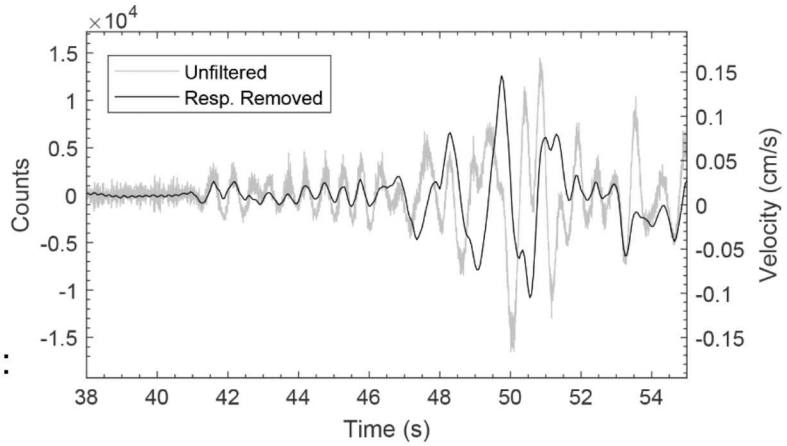
SAND2019-2631C

National Nuclear Security Administration
Defense Nuclear Nonproliferation

- We are digitizing, recovering, and calibrating legacy seismic data from underground nuclear tests (UGTs)
- This will be the only known repository of far-field seismic data from UGTs during the analog era (<1980s)
  - Each new calibration recovers data that was essentially lost to history
  - Hundreds of UGTs prior to digital seismology; provides wealth of new data for seismic analysis
- Calibration is being done by careful measurement of weight-lift tests performed prior to each test
  - Instrument constants derived from measurements of weight lift
- Current results demonstrate improvement over pre-1992 calibrations, possibly more accurate than was possible even at the time of recording







BOXCAR results — peak ground velocity @ Leeds, UT

Pre-1992 method:	New method:	Murphy & Lahoud (1969):
0.1472 cm/s	0.1637 cm/s	0.1620 cm/s

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Poster 15a
Brian Young, Robert E. Abbott
SNL