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Title:	Evaluating the Effect of Shaker Placement Optimization Priorities on Multi-Axis Test Results
Author(s):	Djishev, Risto; Elrod, Kieran; Tasik, Connor Armstrong; Danforth, Shannon Maureen; DeClerck, James; Ouellette, Brittany Joy; Schultze, John Francis
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Evaluating the Effect of Shaker Placement Optimization Priorities on Multi-Axis Test Results

Students: Risto Djishev, Kieran Elrod, Connor Tasik
Mentors: Shannon Danforth, Jim DeClerck, Brittany Ouellette, John Schultze

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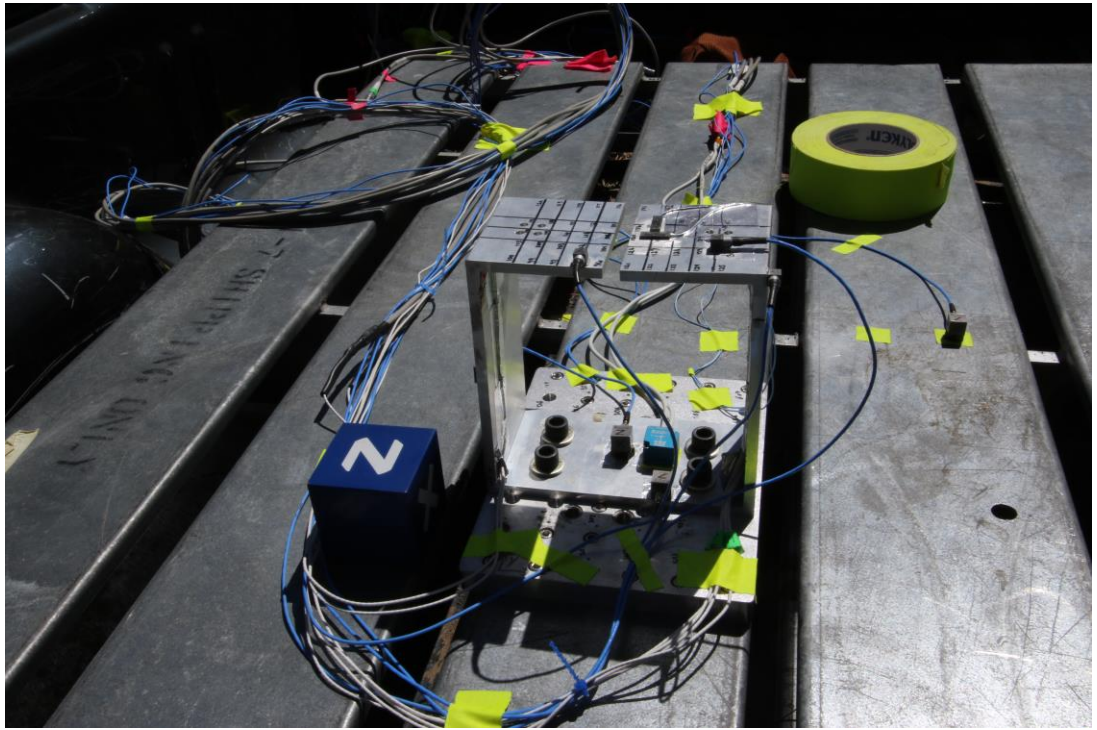
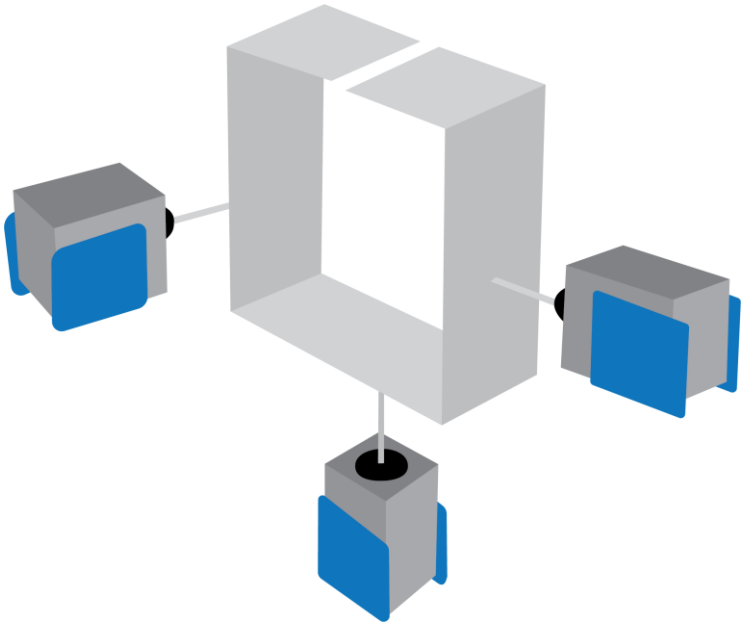
Multi-axis tests can better emulate field environments, but determining shaker placement is difficult.

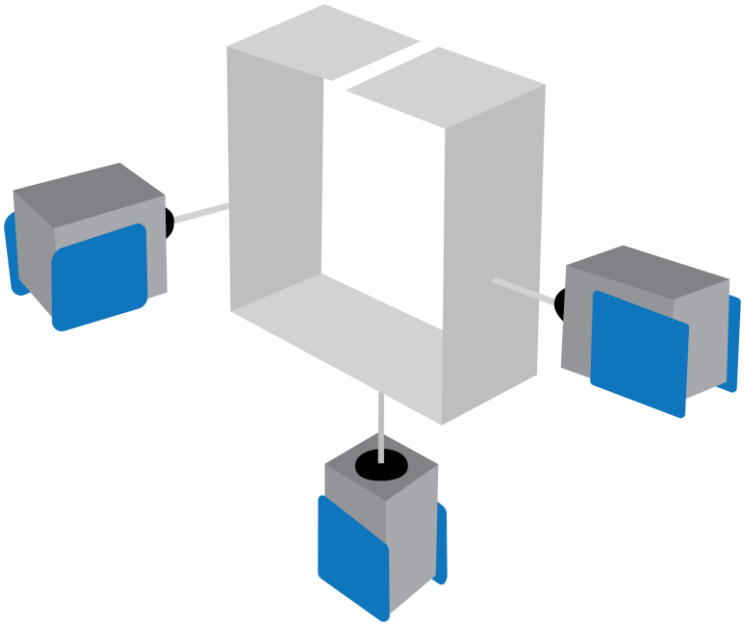




Optimization algorithms are a good way to select shaker locations and directions.

A shaker placement optimization looks like:

- Choose the **shaker degrees of freedom**
  - Location and direction
- To **minimize some cost**
  - E.g., error between field and test data
- While **satisfying some constraints**
  - E.g., keep shaker force below a threshold

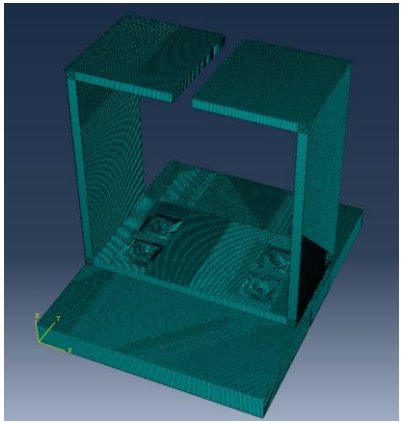


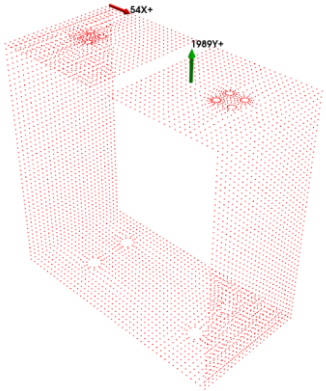
This project evaluates how test results reflect optimization cost and constraints.

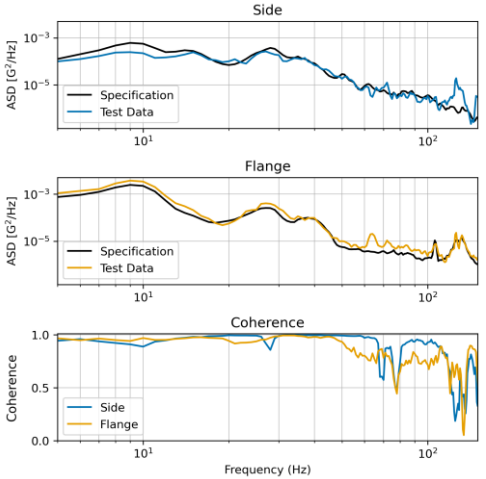
SDynPy

Rattlesnake Vibration Controller

Sandia National Laboratories







Create and calibrate a finite element analysis model.

Use the SDynPy Python toolbox to optimize shaker placement.

Run tests with optimization results.

Analyze: Do test data reflect our optimization cost/constraints?