



Boundary Condition Challenge

Status & Discussion

Dynamic Environments Testing

IMAC XLI Austin, TX

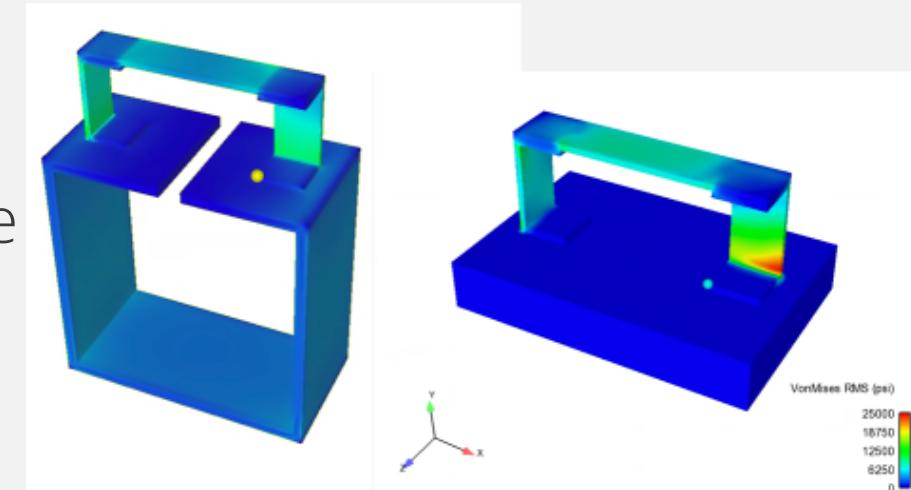
Brief Update on the Boundary Condition Challenge

Active since about 2017

Current leadership

- Troy Skousen, Tyler Schoenherr, David Soine
Sandia
- Jonathan Hower, Raymond Joshua, Kansas
City National Security Campus
- Meeting quarterly

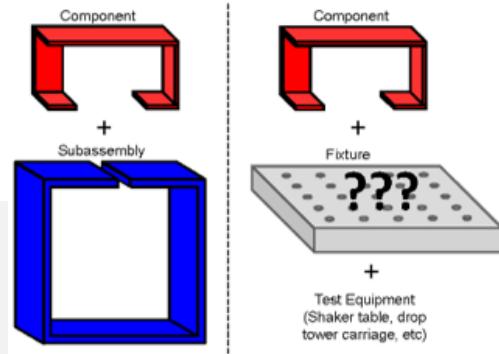
Generated 47+ IMAC papers since inception



The original challenge is still
active area of research.

Success Stories

- Awareness
- Focus on dynamic responses
- IMMAT
- Multi-input/axis test methods
- Dynamic fixture design
 - Model updating
 - Parameterized optimization
- Fixture Neutralization
- Attachment Impedance?
- Modal evaluation tools
- MDOF base input shaker methods?



What do you think are the noteworthy solution paths?

Success in-work

- Single-axis test/dynamic fixture optimization
- Full-field response
 - Impact on fixture design
- Lumped parameter design approach
- Strain control

Not there yet

- Dynamics-driven Topology Optimization

Remaining Challenges

Shock

- Shaker level shock
- Real shock – high G or velocity

How do we rationalize a single-axis test?

Connecting testing to damage

What are the remaining research paths?

Do you need a BARC?

