Payload Opportunities

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NHERI@UCSD Payload Opportunities

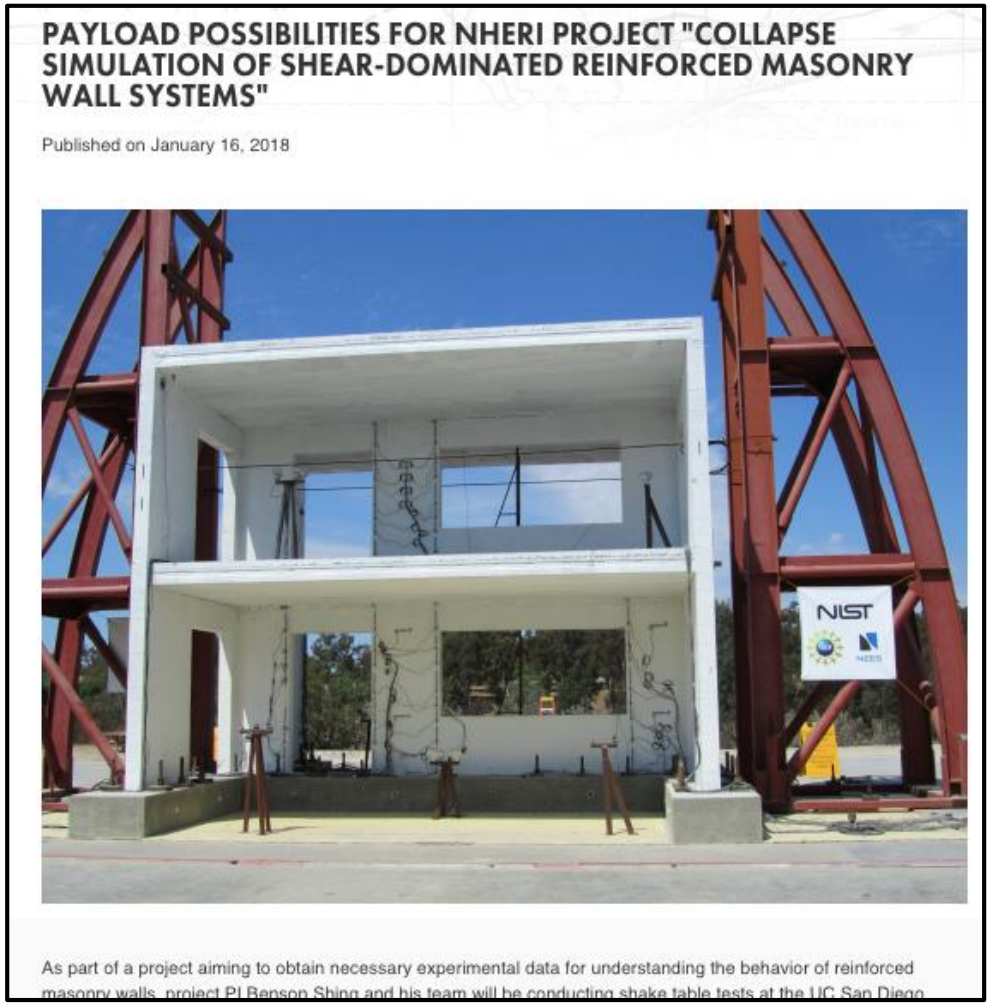
https://ucsd.designsafe-ci.org/payload-projects/

Opportunities for Payload Projects

CFS-NHERI project (Phase 1 and 2)

Shear-dominated masonry wall systems

Sample Payload Opportunity



PAYLOAD POSSIBILITIES FOR NHERI PROJECT "COLLAPSE SIMULATION OF SHEAR-DOMINATED REINFORCED MASONRY WALL SYSTEMS"

Published on January 16, 2018

As part of a project aiming to obtain necessary experimental data for understanding the behavior of reinforced masonry walls, project PI Benson Shing and his team will be conducting shake table tests at the UC San Diego

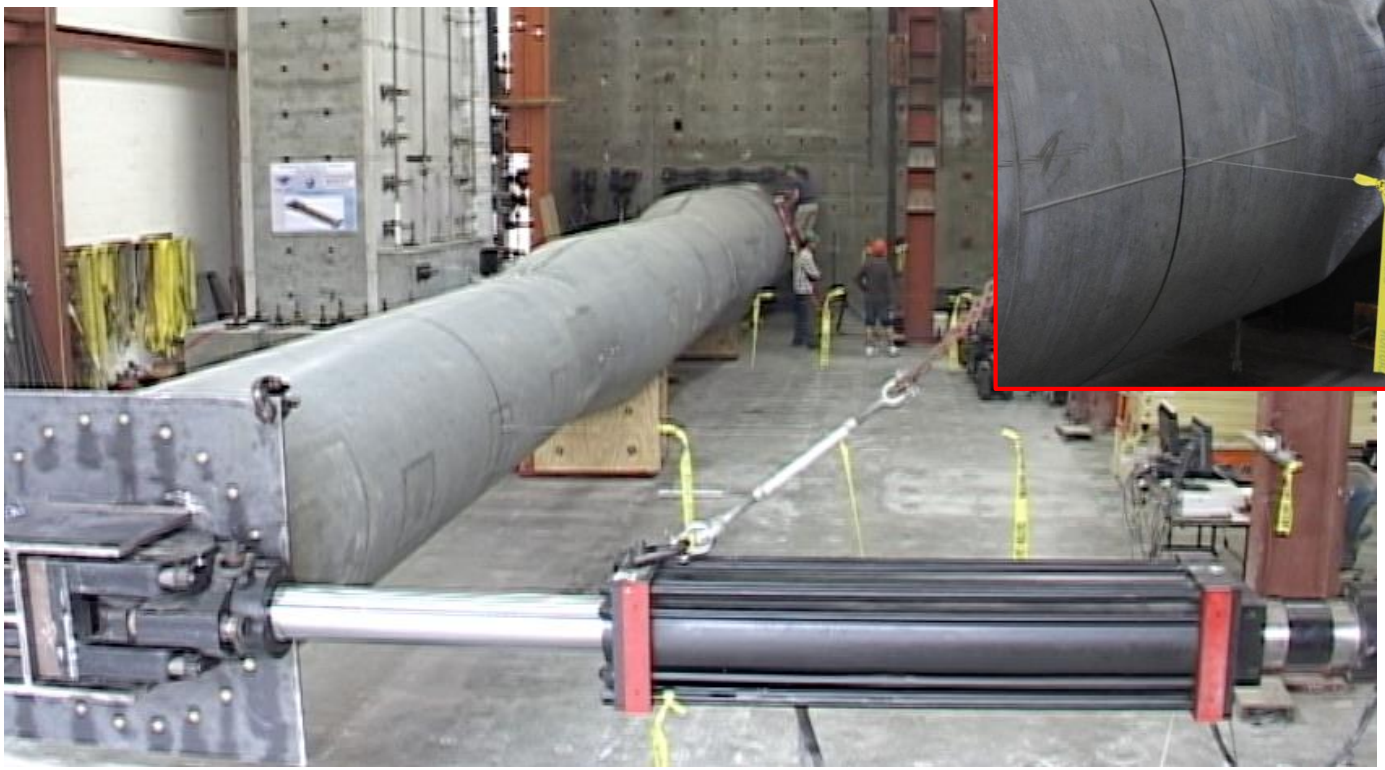
- Project Description
- Test Schedule
- Project PI Contact Information

Wind Turbine Testing (PI: A. Elgamal)

Funding Source of NHERI Payload Projects:

- NSF
- Non-NSF

Testing at Powell Structures Laboratory

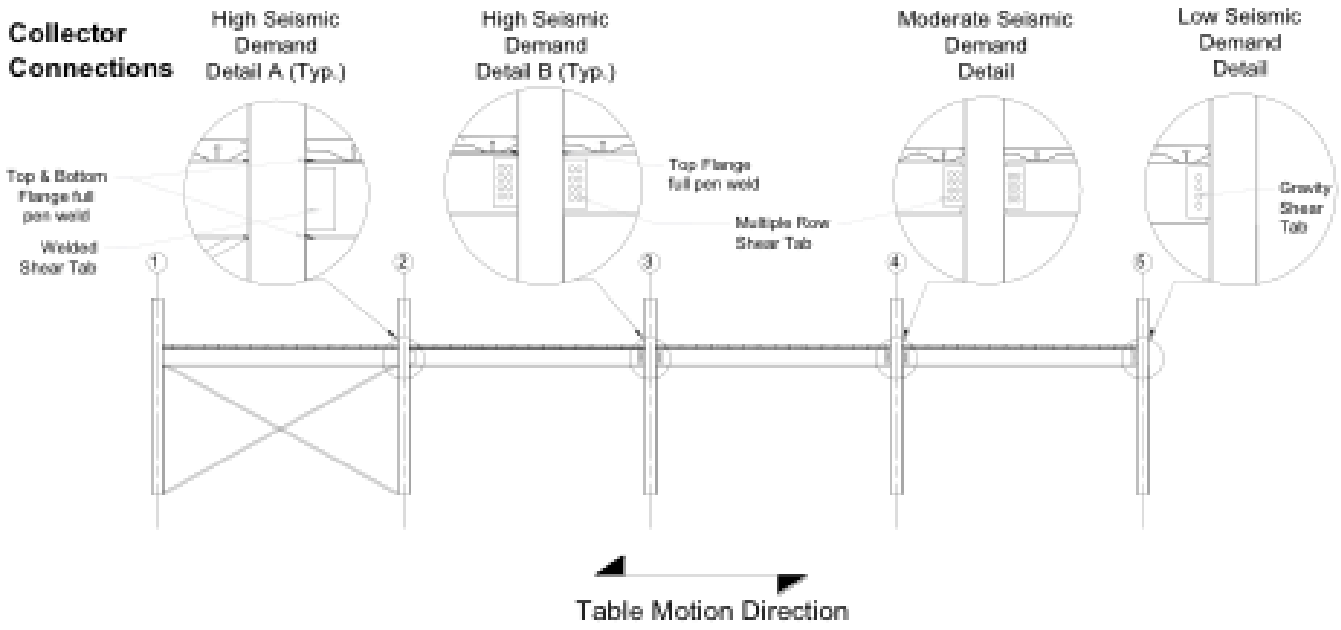


Payload Project PI Responsibilities

- Contact Existing Project PI
- Both PIs to Inform NHERI Network Coordination Office
- Both PIs to Inform NHERI@UCSD Site Operations Manager for Approval of Technical Feasibility/Safety

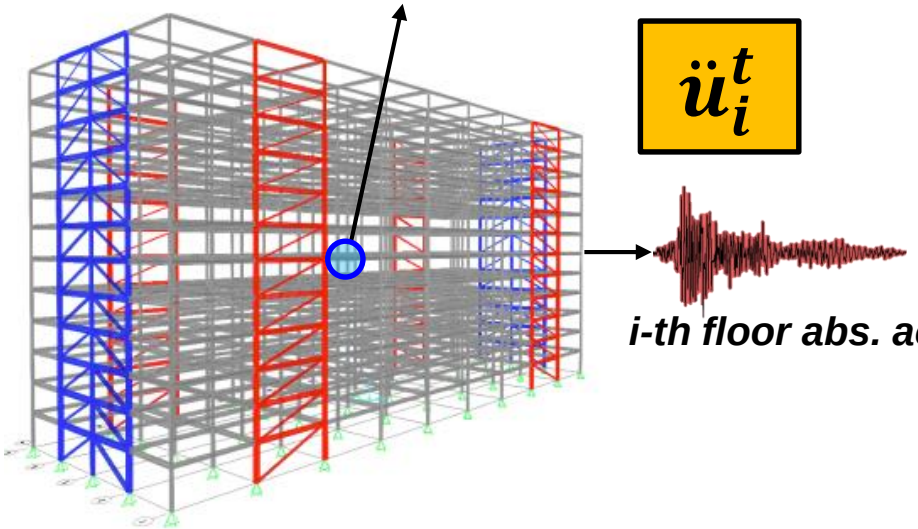
Seismic Collectors in Steel Building Structures

- **University of Arizona: R. Fleischman (PI)**
- **Lehigh University: R. Sause & J. Ricles (co-PIs)**
  - **Large-scale Component Tests**
- **UCSD: C.-M. Uang (co-PI): Shake Table Testing**



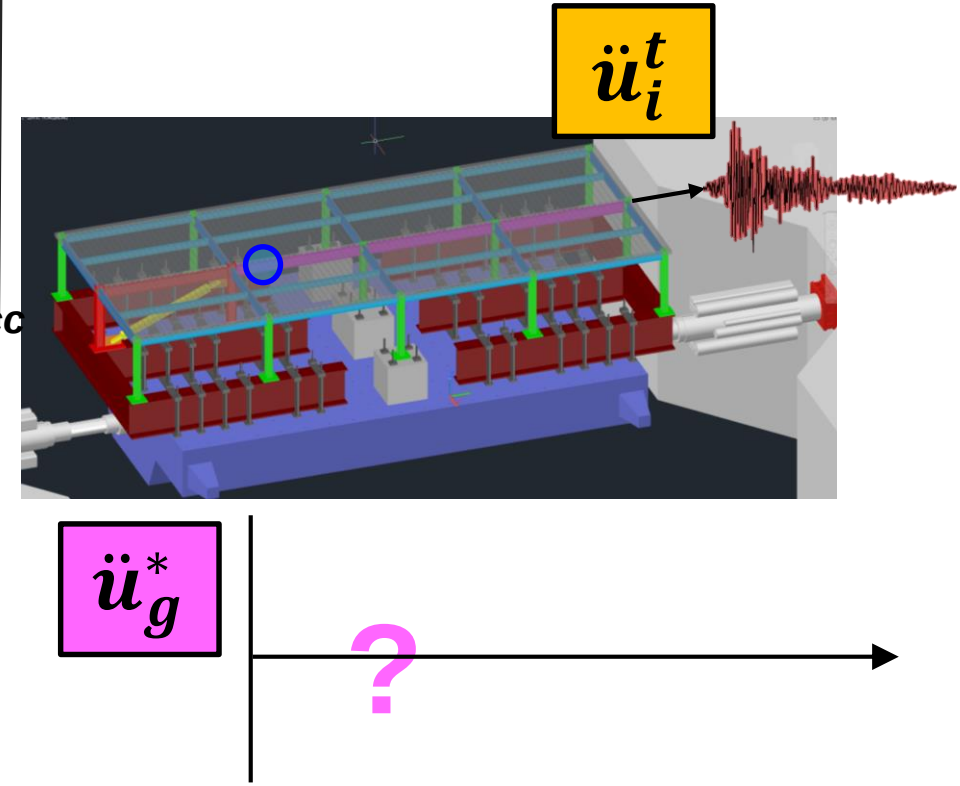
Challenge

Prototype Building



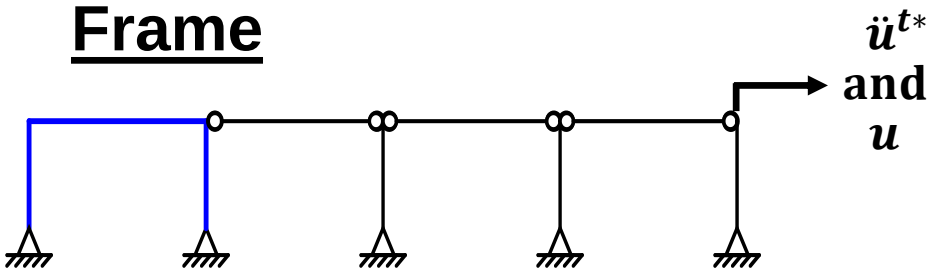
Test Frame

✓ Reproduce i-th Floor Acc. History in an Elastic One-story Test Frame

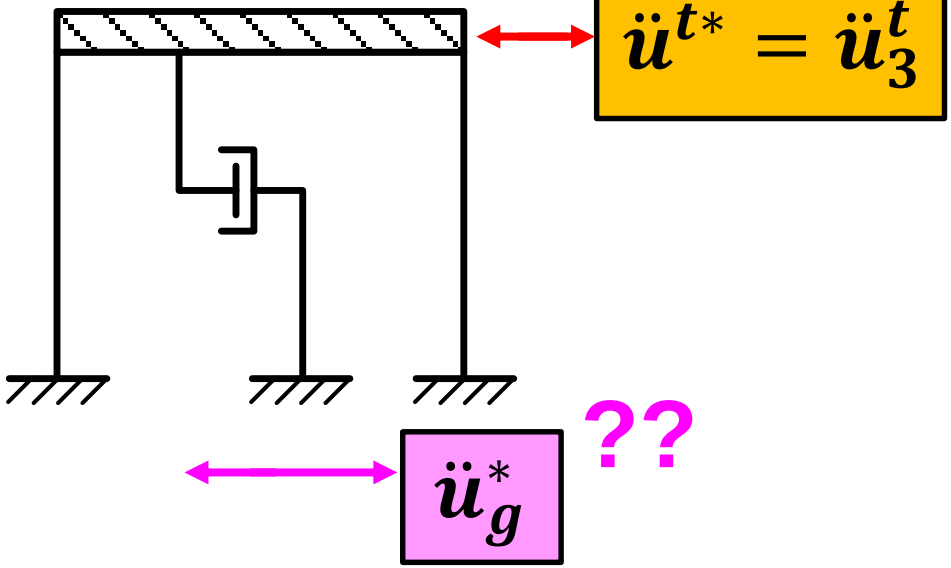


Target Test Frame Response

One-story Test Frame



Elastic SDOF system



Find: $$H(\omega) = \frac{\ddot{u}^{t*}(\omega)}{\ddot{u}_g^*(\omega)}$$

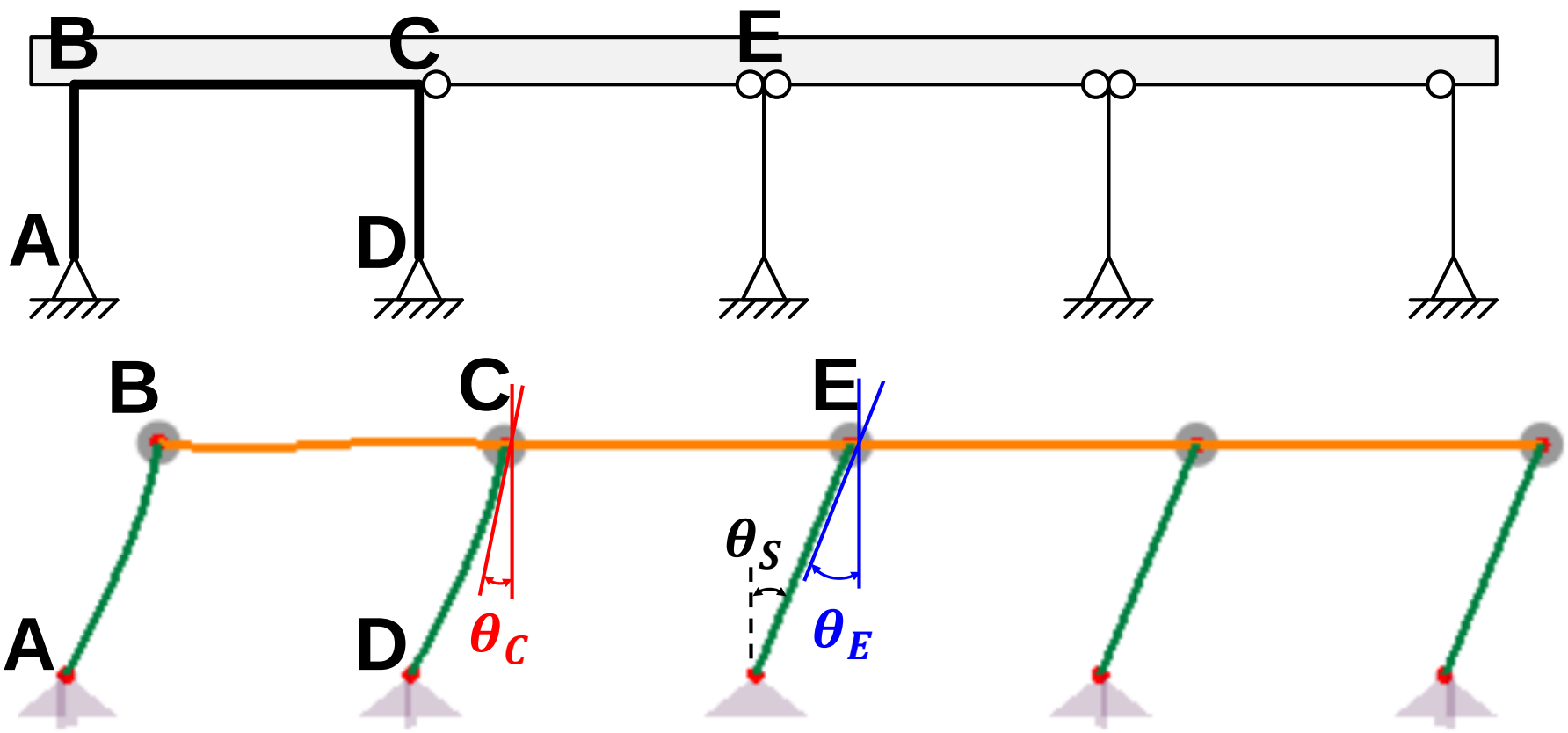
for SDOF system

$\ddot{u}_3^t(t)$ **FFT** $\ddot{u}_3^t(\omega)$

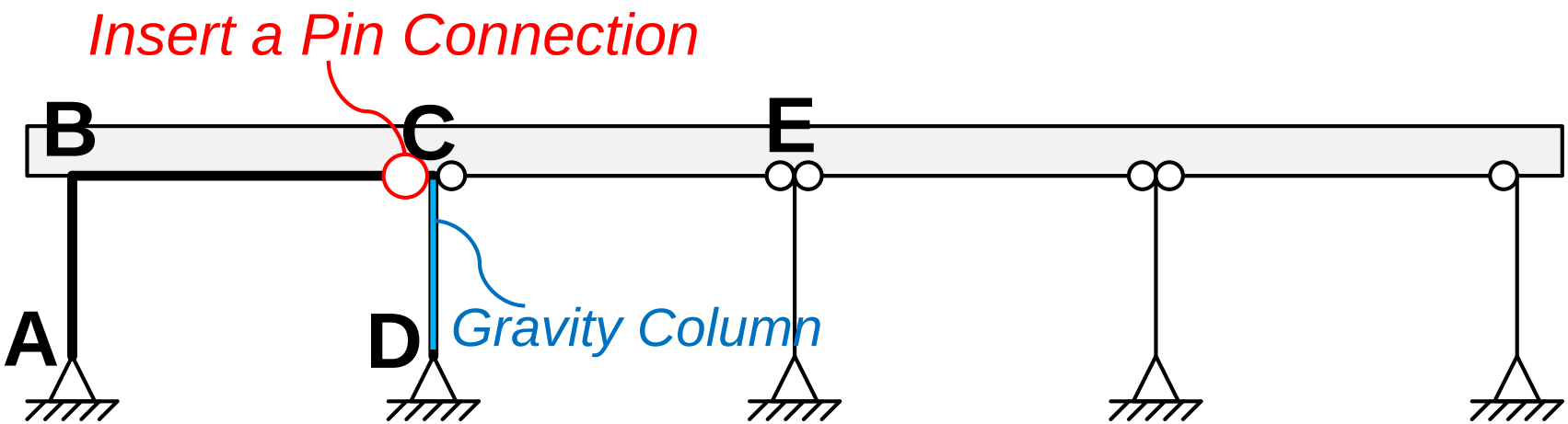
$$\ddot{u}_g^*(\omega) = \frac{\ddot{u}_3^t(\omega)}{H(\omega)}$$

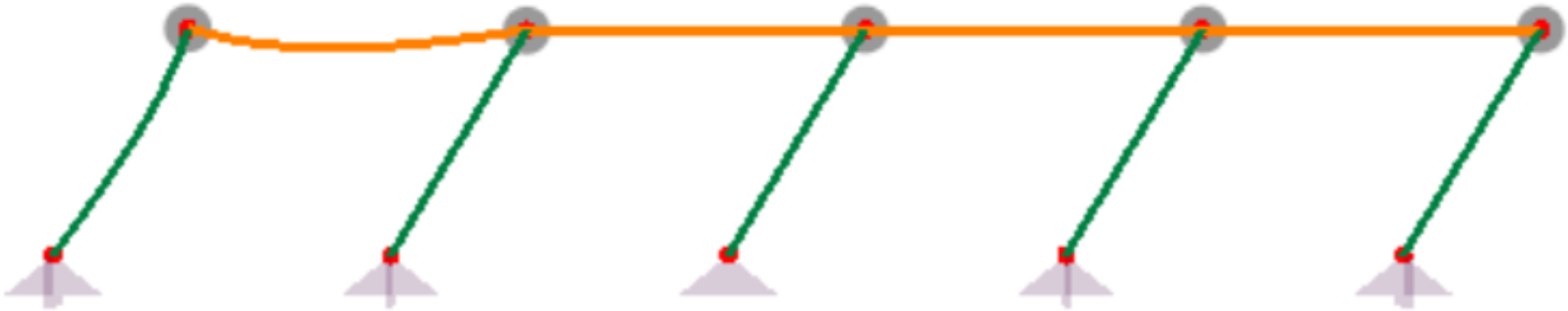
$\ddot{u}_g^*(\omega)$ **iFFT** $\ddot{u}_g^*(t)$

Collector Joint Rotation Angles

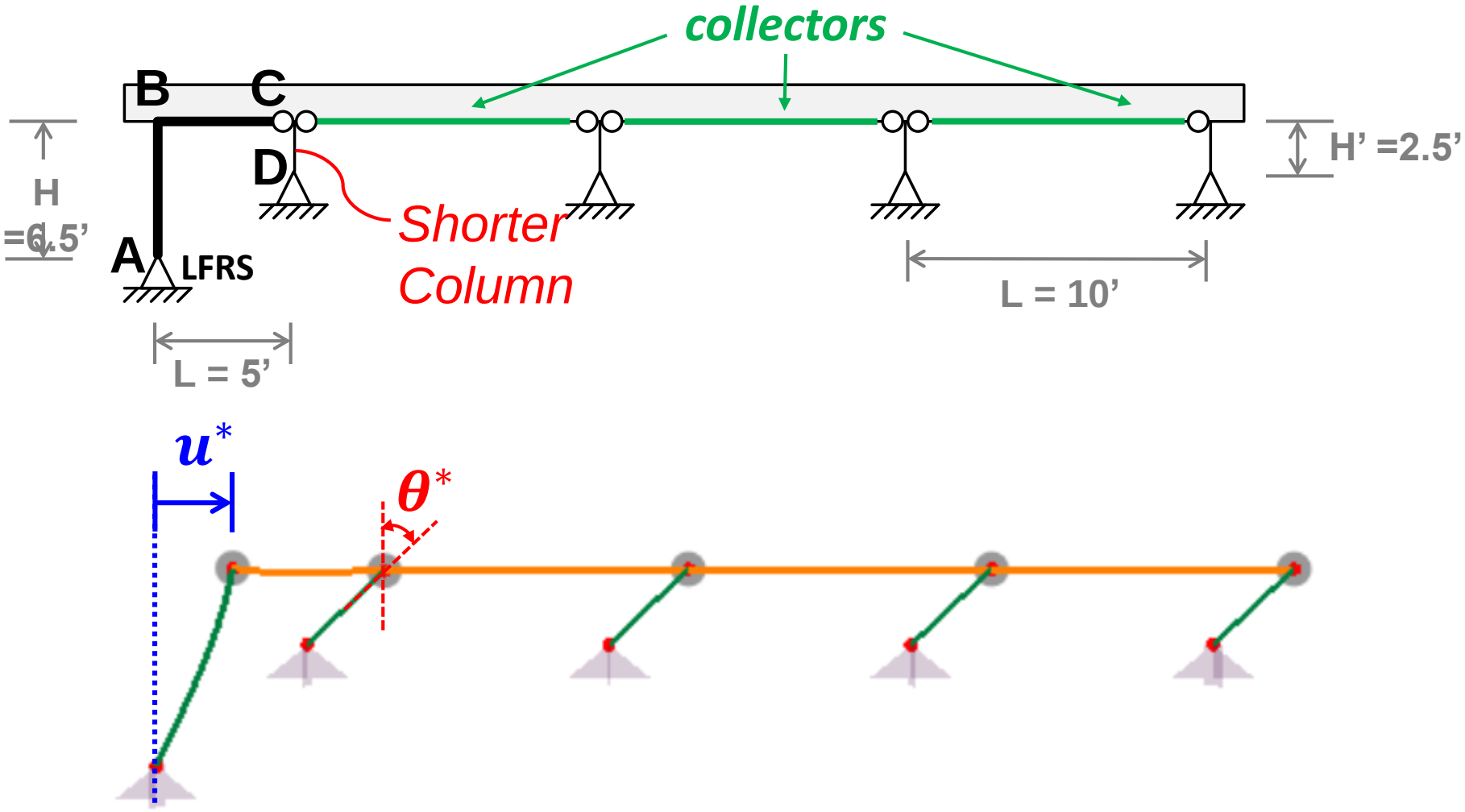


Collector Joint Rotation Amplification: Modification 1

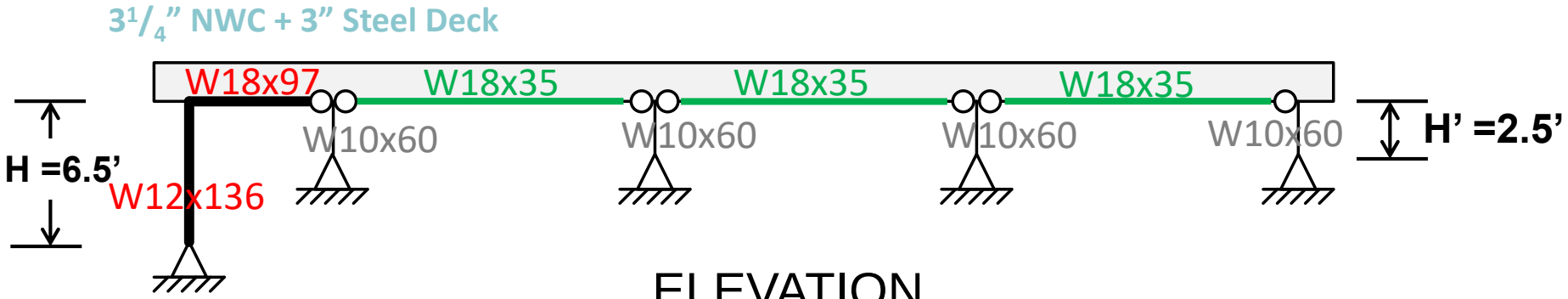




Collector Joint Rotation Amplification: Modification 2

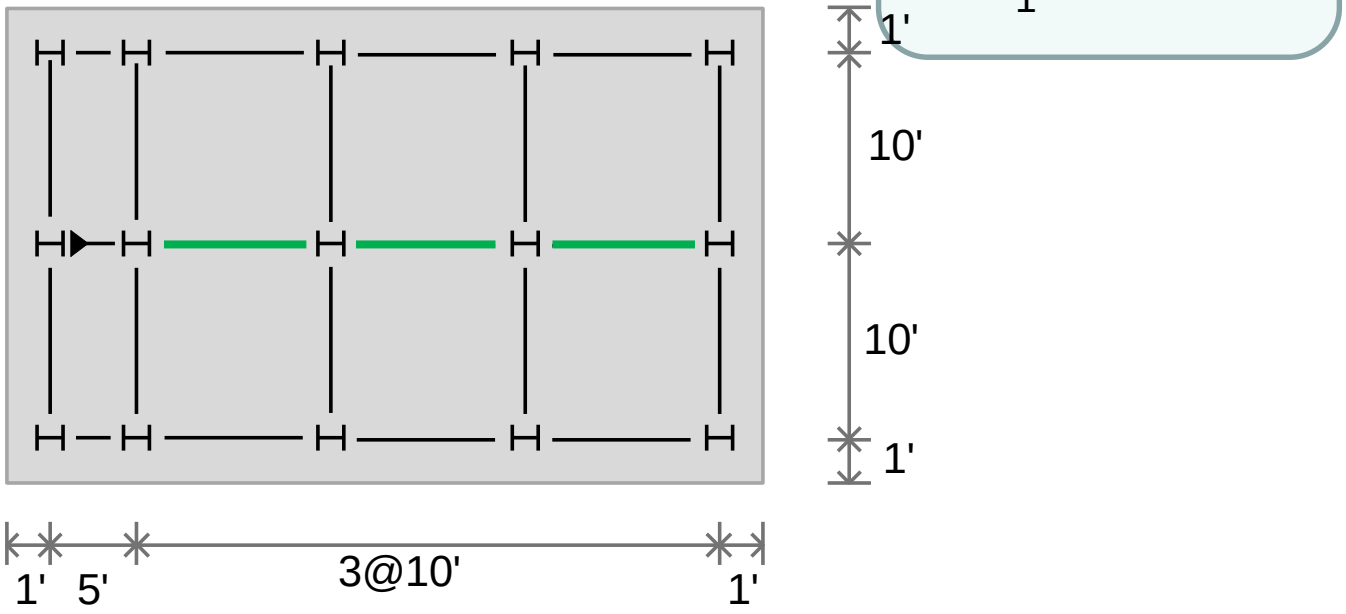


Trial Test Frame Design



ELEVATION

T_1 = 0.20 s



PLAN

Test Data/Publication Issue

- Coordination with Existing Project PI