A Cyberinfrastructure for Natural Hazards Research

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What is DesignSafe?

- A web-based research platform that enables transformative research to protect human life and reduce damage during natural hazard events

DesignSafe Vision

- A cyberinfrastructure (CI) that is an integral part of research discovery
  - Provide a platform for data sharing/publishing
  - Enable research workflows and access to high performance computing (HPC)
  - Deliver cloud-based tools that support the analysis, visualization, and integration of diverse data types
- Amplify and link the capabilities of natural hazards researchers in the US and abroad

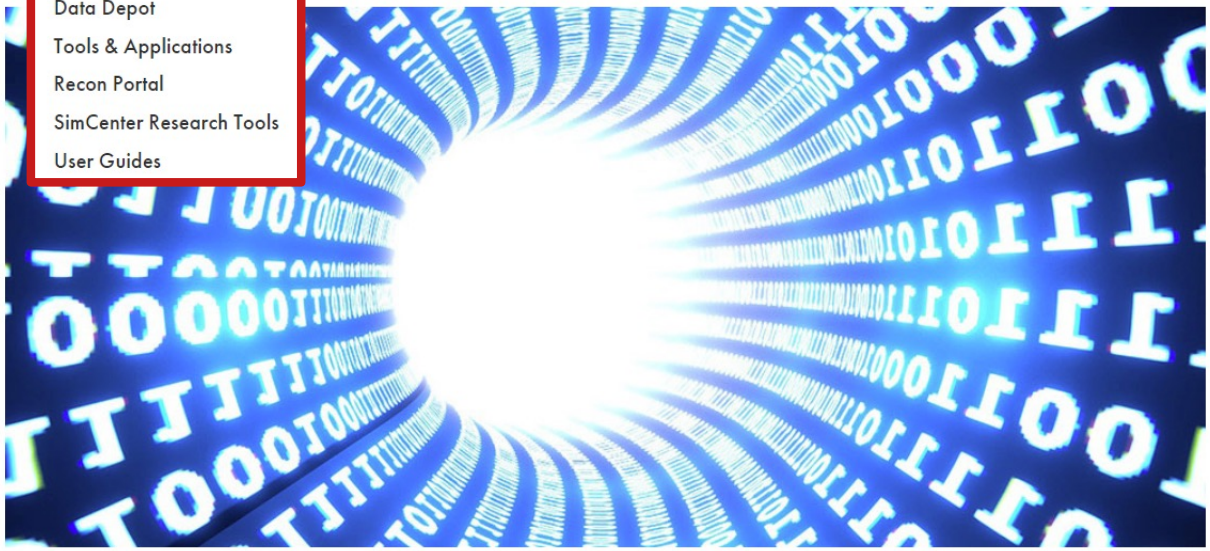
DESIGNSAFE

www.designsafe-ci.org

Workspace | Learning Center | NHERI Facilities | NHERI Community | Help

Search DesignSafe

- Data Depot
- Tools & Applications
- Recon Portal
- SimCenter Research Tools
- User Guides



INAUGURAL DESIGNSAFE DATASET AWARDS

Data Impact

Explore newly published datasets and learn how researchers are reusing data.

READ THE IMPACT REPORT

Training & Events

DECEMBER 15, 2020
Third Planning Meeting of the NHERI and EUCENTRE Foundation Research Collaboration

DECEMBER 16, 2020
4th NHERI-NIED/E-Defense Research Collaboration Meeting

DECEMBER 17, 2020
Leveraging DesignSafe with TAPIS

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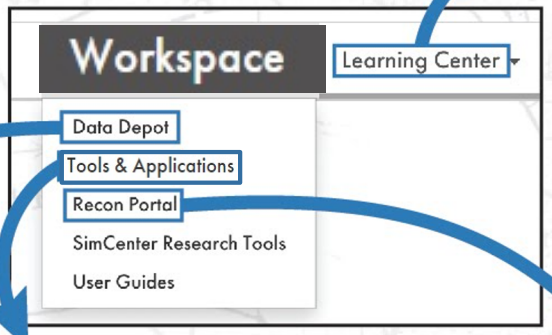

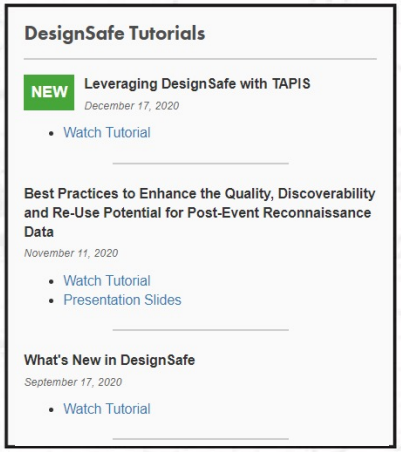

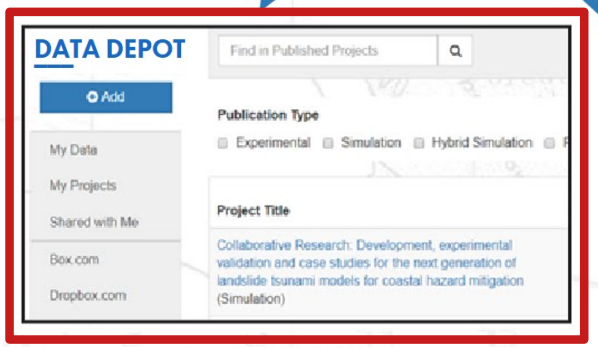

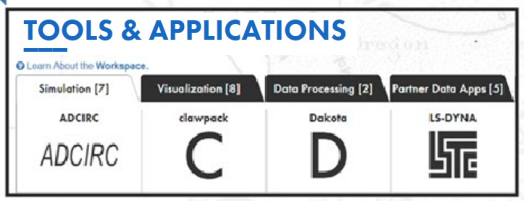

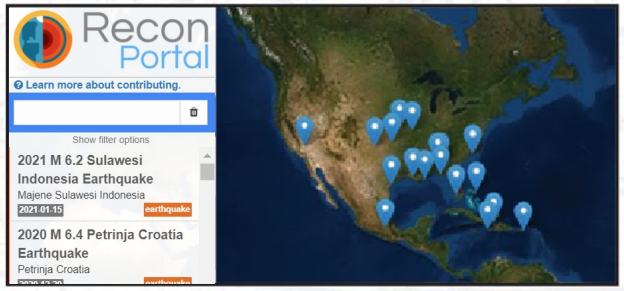

jupyter

HazMapper

QGIS

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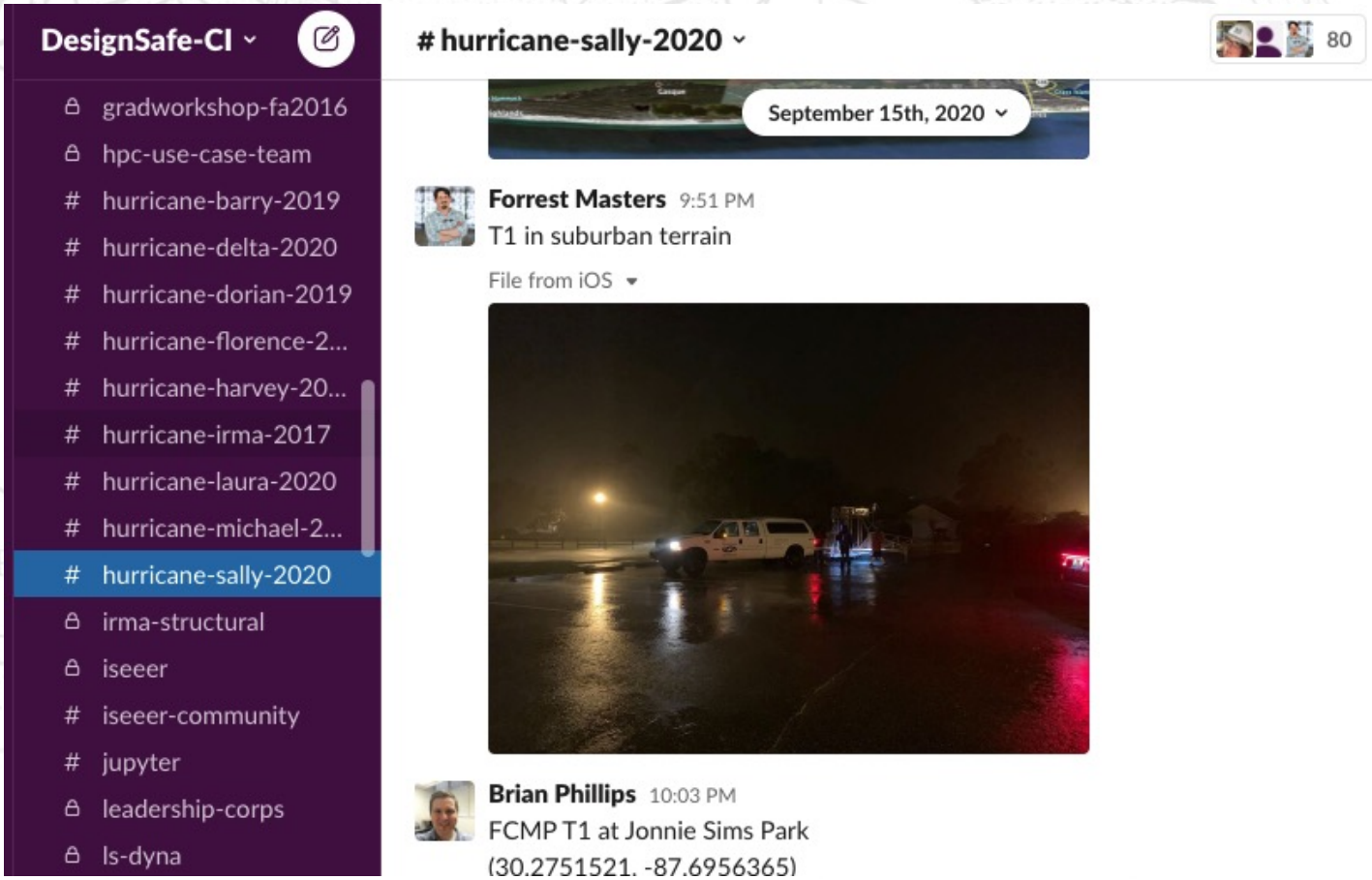
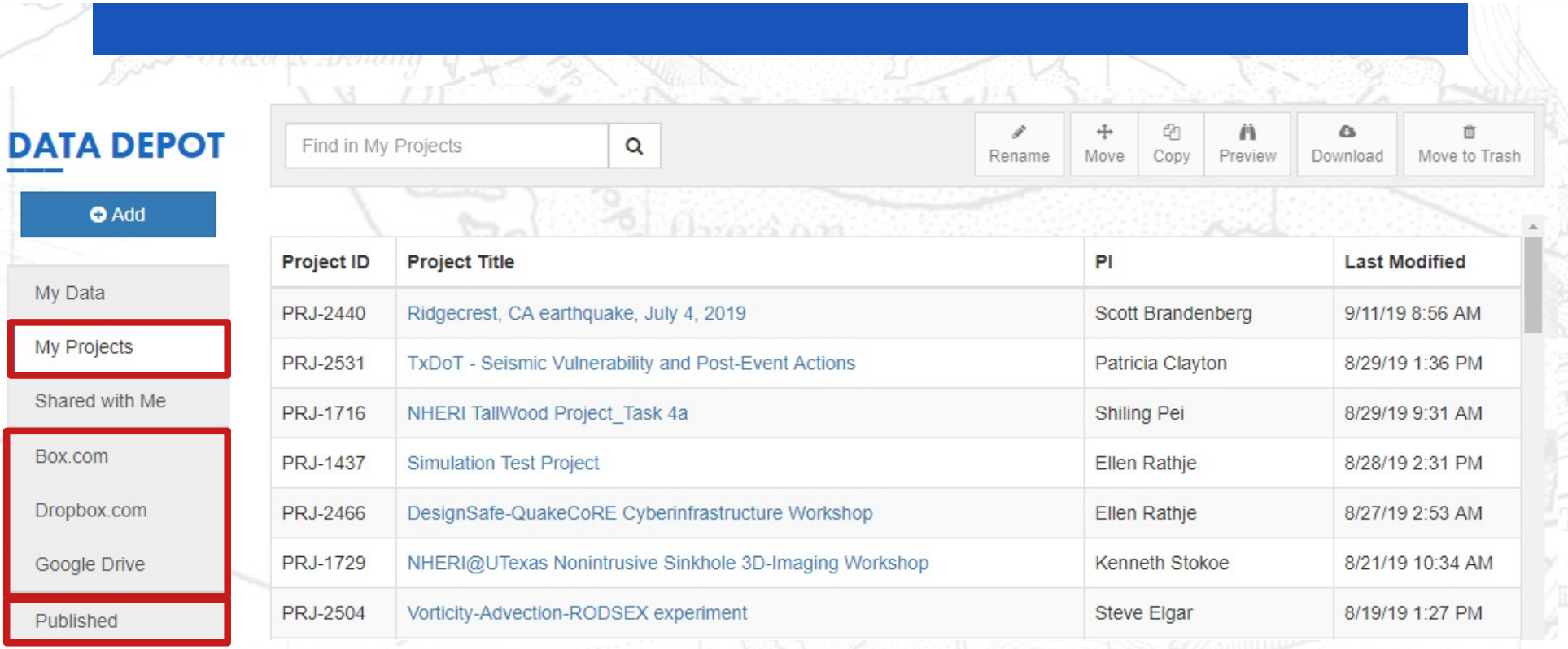
Real time collaboration during a hazard event via Slack





My Projects: A space to share files/data/results with collaborators and to <u>eventually</u> publish for public use

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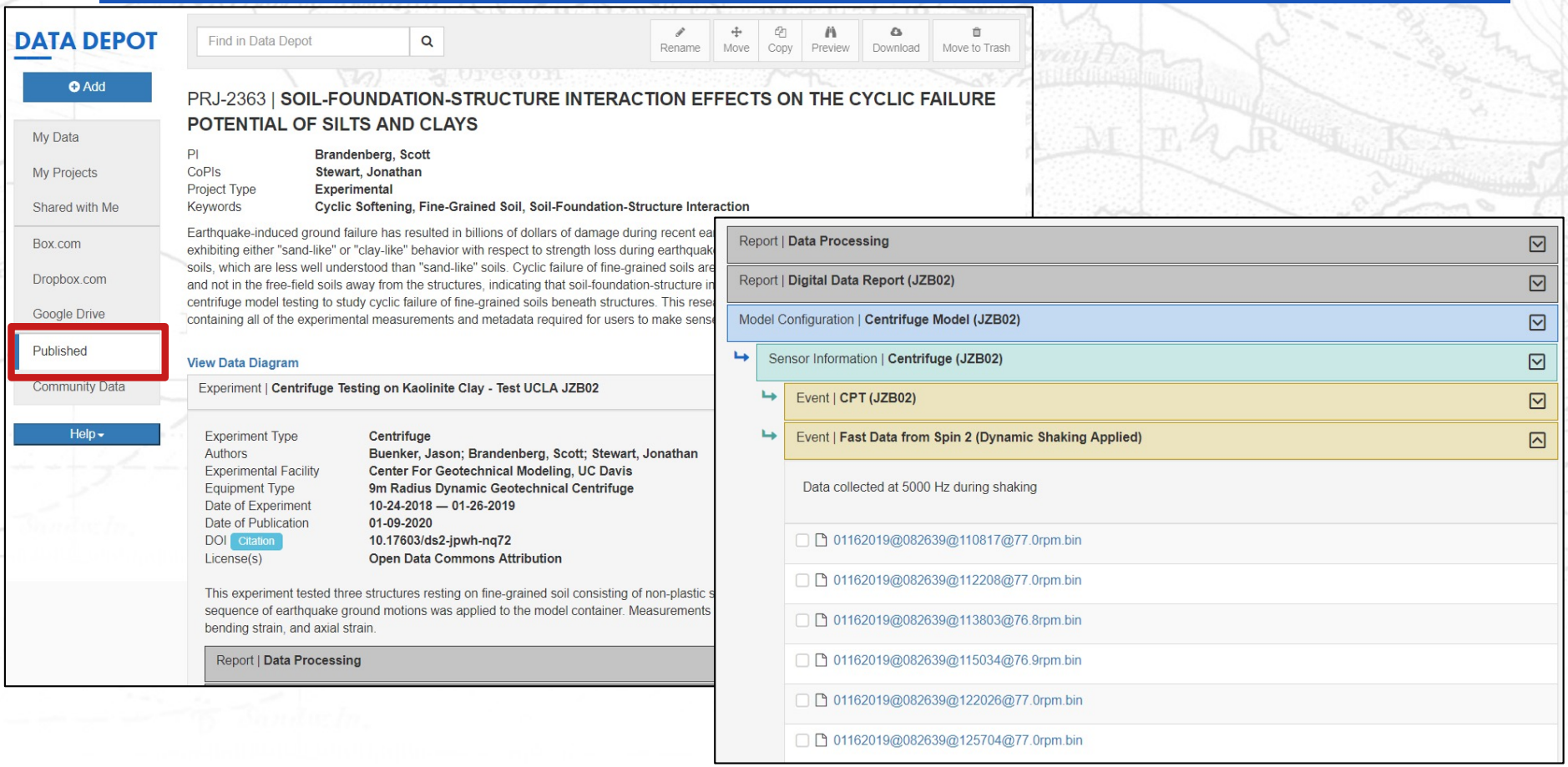

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DesignSafe Data Models

Structured, yet ***flexible***, data models for different types of research

- **Experimental Project**
  For physical work, typically done at an experimental facility or in the field.
- **Simulation Project**
  For numerical and/or analytical work, done with software.
- **Hybrid Simulation Project**
  For work using both physical and numerical components.
- **Field Research Project**
  For work done by observation in areas affected by a natural hazard.
- **Other Project**
  For work other than the project types above.

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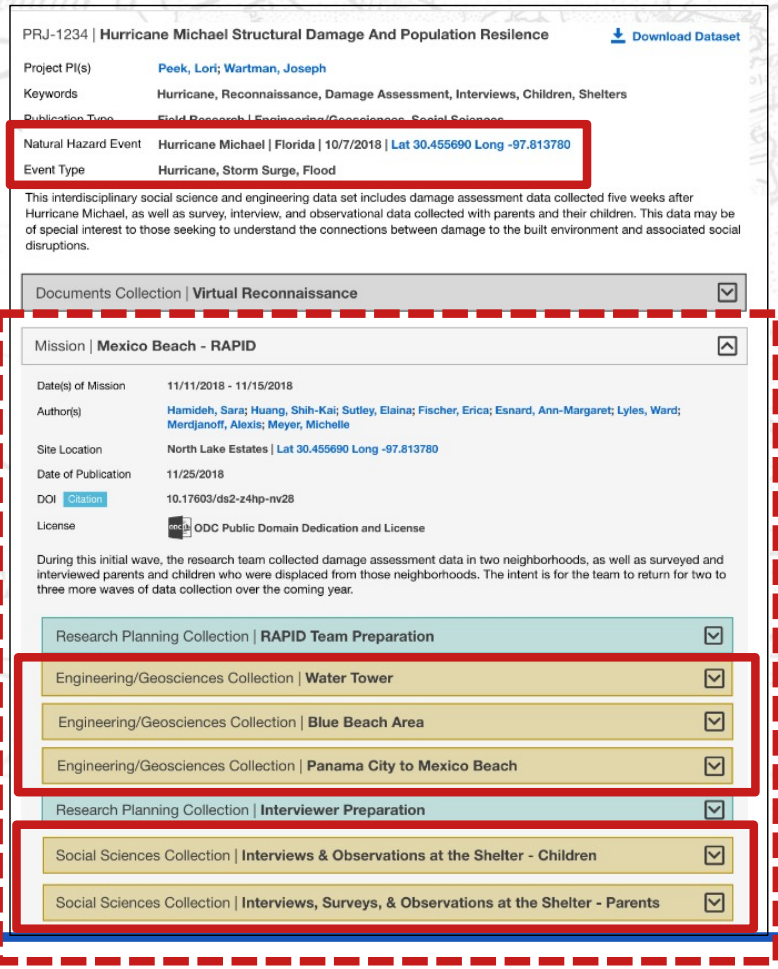
Supporting integrated interdisciplinary datasets



Organizational Structure

Mission: A group of data collections that are associated with a common goal, location, or time

Collection: Data grouped together based on a shared purpose in a project or mission.

Make **your** data count!

Make your research re-producible and your data re-usable

- ***Formally publish*** data sets in stable data repositories
  - Include data processing scripts, visualizations, etc.
- Data needs a permanent, ***digital location (DOI)*** not just a URL
  - List curated data sets on your CV, just like papers
- Cite data publication ***in your reference list*** of your paper using DOI, citation language as indicated in DesignSafe

provided here. Additionally, the probabilistic approaches described in this paper are implemented as executable Jupyter notebooks (Saygili 2018a, b). These notebooks can be accessed in the Data

References

Saygili, G., Rathje, E., and Wang, Y. (2018a). "Probabilistic seismic hazard analysis for the sliding displacement of rigid sliding masses [Data set]." Designsafe-CI ⟨https://doi.org/10.17603/ds22d6k⟩

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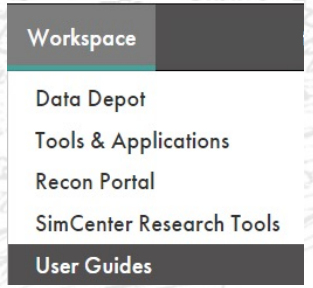
Curation Assistance

- Curation and publication guidelines under ***User Guides***
  - https://www.designsafe-ci.org/rw/user-guides/data-curation-publication/
- Data transfer methods
  - https://www.designsafe-ci.org/rw/user-guides/data-transfer-guide/
  - Web browser/Dropbox/etc (smaller uploads), Globus, Cyberduck
- Virtual Curation Office Hours
  - DesignSafe Data Curators: Maria Esteva and Mahyar Sharifi
  - Tuesday and Thursday at 1 pm Central (or by appt)
  - https://www.designsafe-ci.org/learning-center/training/



slack