Supplementary material to the paper:

Shake table testing of a half-scale stone masonry building aggregate

SERA AIMS – Test data

File version: 1.0

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Project: SERA – Adjacent Interacting Masonry Structures (AIMS)

This document outlines the structure of the folders and files of the SERA AIMS test data. It includes raw data, functions used to process the data with the accompanying files explaining and documenting the procedure, processed data, and the functions used to plot the processed data. Further readme files in the Folder "02_Functions_processing" explain how we processed the data. In the following, the file structure is explained so that it can be downloaded and used separately.

Structure of folders and files:

01_Raw_data

- output.xlsx – Raw data as obtained from LNEC, email date 14th August 2021
- Optotrak_data_cumulative – Folder containing Optotrak cumulative displacements

02_Functions_processing

- process_accelerations.m – Function used to process and verify accelerations
- readme_accelerations.pdf – Readme explaining the processing of raw accelerations
- check_accelerations.xlsx – File used to keep track of the verifications and changes of the raw acceleration data
- process_base_shear.m – Function used to calculate base shear values
- readme_base_shear.pdf – Readme explaining the process of calculating base shear values
- process_displacements.m – Function used to process and verify displacements
- readme_displacements.pdf – Readme explaining the processing of raw displacements
- check_displacements.xlsx – File used to keep track of the verifications changes on the raw displacement data
- instrumentation_v1.7pdf – Instrumentation plan with the assigned numbers
- Accelerometers_mass – Folder containing masses assigned to the accelerometers and functions used to assign them

03_Processed_data

- accelerations_processed.mat – Processed accelerations saved in the Matlab structure
- base_shear.mat – Calculated base shear saved in the Matlab structure

- displacements_processed.mat – Processed displacements saved in the Matlab structure
- merge_data.m – Function used to merge all the data into a single file
- data_processed.mat – All the processed data merged and saved in the Matlab structure
- Export_csv – Folder containing data exported into csv format, including the functions used for the export and import

04_Functions_plotting

- plot_base_shear_displacements.m – File used to plot the data
- plot_IDA_curves.m – File used to plot base shear and displacements IDA curves
- instrumentation_v1.7pdf – Instrumentation plan with the assigned numbers
- Functions – Folder containing functions used to plot the data

data_processed.mat consist of a Structure "S" that contains the following:

- acc – Matrix of recorded accelerations. Column number corresponds to the acceleration number in "instrumentation_v.1.7pdf"
- accY – Acceleration of the shake-table in the y-direction. Corresponds to the longitudinal direction of the test unit.
- accX – Acceleration of the shake-table in the x-direction. Corresponds to the transversal direction of the test unit.
- BSH – Matrix of global base shear values
- BSH_U1_x – Matrix of base shear values of Unit 1 in the x-direction
- BSH_U1_x – Matrix of base shear values of Unit 1 in the y-direction
- BSH_U2_x – Matrix of base shear values of Unit 2 in the x-direction
- BSH_U2_y – Matrix of base shear values of Unit 2 in the y-direction
- displacement – Matrix of cumulative displacements of the control points. Column number corresponds to the displacement number in „instrumentation_v1.7pdf"
- dispY – Displacement of the shake-table in the y-direction. Corresponds to the longitudinal direction of the test unit.
- dispX – Displacement of the shake-table in the x-direction. Corresponds to the transversal direction of the test unit.