FoRDy Database – Data Curation Checklist

1) Ensure that the data table values that are independent of the time series are consistent with each other and with relevant references (e.g., check that the footing bearing pressure uses the reported footing-base axial load and footing plan dimensions).

2) Confirm that the time series in the *Critical Data* files follow the sign convention, are sensible and consistent with each other and with other references. More specifically:

   a) Check that the deformation and footing moment time series are reasonably continuous for the same structure across consecutive shakes.

   b) Check the sign of the linear and angular acceleration time series by inspection of the upwards motion propagation, as it is not uncommon in an experiment to have accelerometers aiming in opposite directions. Concerning the propagation of the horizontal accelerations, for example, the ground surface motion should look similar and have a small phase delay from the input motion at the base of the soil container, the footing motion should be almost identical and in phase with the soil surface motion, whereas the deck motion will generally look different and may or may not be in phase with the footing motion depending on the period characteristics of the ground excitation and structure.

   c) Use the acceleration time series in the data files and the test configuration information in the database (e.g., masses, dimensions) to reproduce and check the reported footing force time series. Also, plot the foundation force interaction diagrams (i.e., moment versus axial load, moment versus shear load, and shear versus axial load) and confirm that they make sense (examples of sensible plots are given in Figure 7).

   d) Check that the lateral displacement at the centroid of the deck (or of the structure) due to the footing rotation and sliding, and the column flexibility is comparable to that calculated from the structure drift ratio time series. Also, the time series for footing rotation and sliding should almost be in phase, but should have a different shape.

   e) Plot the structure (e.g., footing moment versus structure drift ratio) and foundation (e.g., footing moment versus rotation) hysteretic responses, and the foundation deformation relationships (e.g., footing settlement versus rotation) and confirm that they are consistent with relevant references and reasonable. For example, footing shear load-sliding hysteretic curves tend to be more rigid-plastic and have little recentering, whereas footing moment-rotation curves may display the characteristic recentering tendency; in addition, both hysteretic responses should be “on average” positively correlated and result in energy dissipation (i.e., should have clockwise patterns).

   f) Make sure that the soil acceleration time series are identical for different structures shaken at the same time, if the ground motions are selected to represent the average excitation across the container and are not structure-specific.

3) After checking the above, ensure that the remaining data table values (i.e., *Ground Motion Properties* and *Performance Results*) and *Critical Plots* are consistent with the experimental time series in the *Critical Data* files.