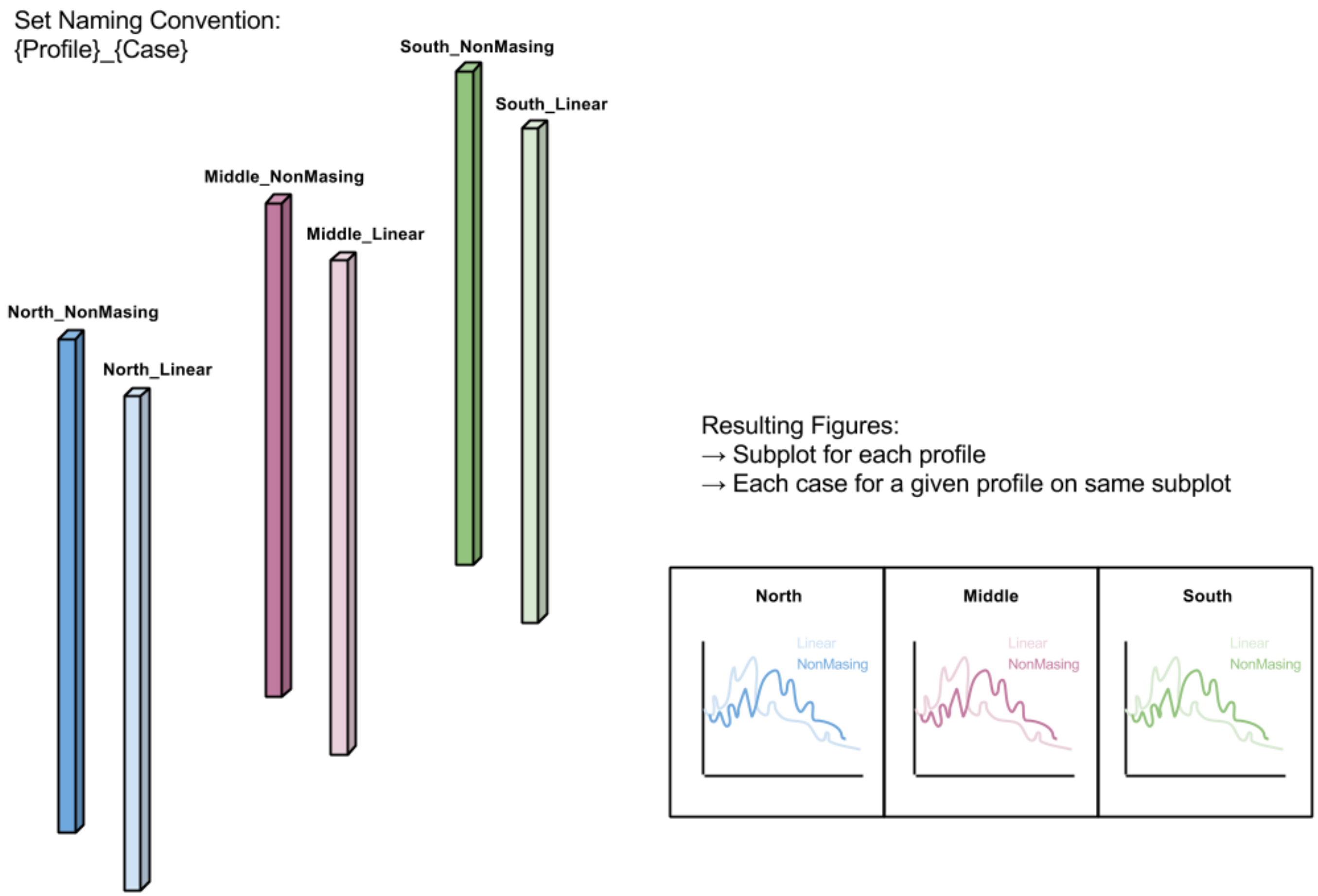
Pre-processing

A. Setting up Dyna model …

1. Create soil column(s)
    a. Open “blank.key” in PRIMER
    b. Go to “Script” → Open “layer_create_version_2.js” → Run
    c. Select “DYNA_Model_Data.csv” and follow prompt
    d. Remove original blank part
    e. Create SET_PART which contains all soil layers
    f. Apply DEFINE_STAGED_CONSTRUCTION to the SET_PART defined earlier. Keep all parameters at 0.
    g. Set INITIAL_PWP_DEPTH for SET_PART defined earlier.
    h. Set INITIAL_STRESS_DEPTH for SET_PART defined earlier, apply the horizontal and vertical stresses.
    i. Set BOUNDARY_PORE_FLUID with ATYPE = 1
    j. Reorient all nodes if needed (i.e. if you will be merging multiple soil columns and do not want them to overlap)
    k. If want to use “NonMasing” material
        i. Go to “Include”, go to the arrow by the model name, hover over the arrow next to “Add child” and selected “*INCLUDE”
        ii. Click folder icon and write name you want (e.g. “Delete.key”)
        iii. Click “OK” to creating empty include file
        iv. Go to MATERIAL → “Keyword”
        v. Select all soil materials (should be all but the last, which is a damper)
        vi. Move from “Main” model to the empty include file you just created (e.g. “Delete.key”)
    l. Write model
    m. In Vim, include Damping, Strength, and Material key files (as created from the spreadsheet)
    n. Repeat as needed to create all columns of interest
    o. Merge soil columns as needed – be sure to use “Check” when merging and avoid clashing of ID’s
    p. Loading should be input as velocities (in m/s) as LC1001 (x), LC1002 (y), and LC1003 (z)

2. Create node sets and solid sets for post-processing (see image below)
    a. For each column, create a node set called {PROFILE}_{CASE} that includes a surface node and a base node
    b. For each column, create a soil set called {PROFILE}_{CASE} that includes all solids in the column
    c. Be sure to report these in DATABASE_HISTORY_NODE and DATABASE_HISTORY_SOLID



B. Running Javascripts to create csv files …

1. Go to "Script" and click on the yellow folder icon. Locate "PRE_sets.js".
   If you're running it out of my transfer drive, the file location is: *T:\S-F\Nicole Paul\Javascript\1_Pre-PRIMER*
2. Click "Run"
3. Click "Select Output CSV Directory" and choose where you would like your CSV's to be output. You should choose the directory in which your THF files are saved
4. Click "Nodes" and select all node sets that you want to post-process.
5. Click "Solids" and select all solid sets that you want to post-process.
6. Click "Exit"
7. In the CSV directory chosen earlier, there should now be two CSV's called "req_node_sets.csv" and "req_solid_sets.csv"

C. Setting up directories for post-processing …

1. For each model run that you will be post-processing, copy the "req_node_sets.csv" and "req_solid_sets.csv" files over to those directories

2. If you will be comparing to recorded data, put csv files of the format shown below in each directory

   File Name: "recorded_rs_{STATION}.csv" (e.g. recorded_rs_tsx1.csv, recorded_rs_tsx2.csv for stations TSX1, TSX2)

T	RSx	RSy
0	0	0
0.01	0.40	0.60
…	…	…

3. If you will be using outcrop data, put the velocity (m/s) time histories in with file names "outcrop_x.csv" and "outcrop_y.csv" in each directory. These should be two columns where the first column is time and the second column is the outcrop velocity in that direction. No headers are expected.

Post-processing

A. Running Javascripts to create csv files …

1. Recommend to first transfer the THF and BIN files to an external hard drive or your local drive first

2. Open T-HIS

3. Go to “Javascript”

4. Increase Memory from 25 to some large number (e.g. 500)

5. Click the yellow folder icon. Locate “node_TH.js”
   If you’re running it out of my transfer drive, the file location is: *T:\S-F\Nicole Paul\Javascript\2_Post-THIS*

6. Click “Run”

7. Wait until the command window says “SCRIPT COMPLETED”

8. In “Javascript”, click the yellow folder icon again. Location “solid_TH.js”
   If you’re running it out of my transfer drive, the file location is: *T:\S-F\Nicole Paul\Javascript\2_Post-THIS*

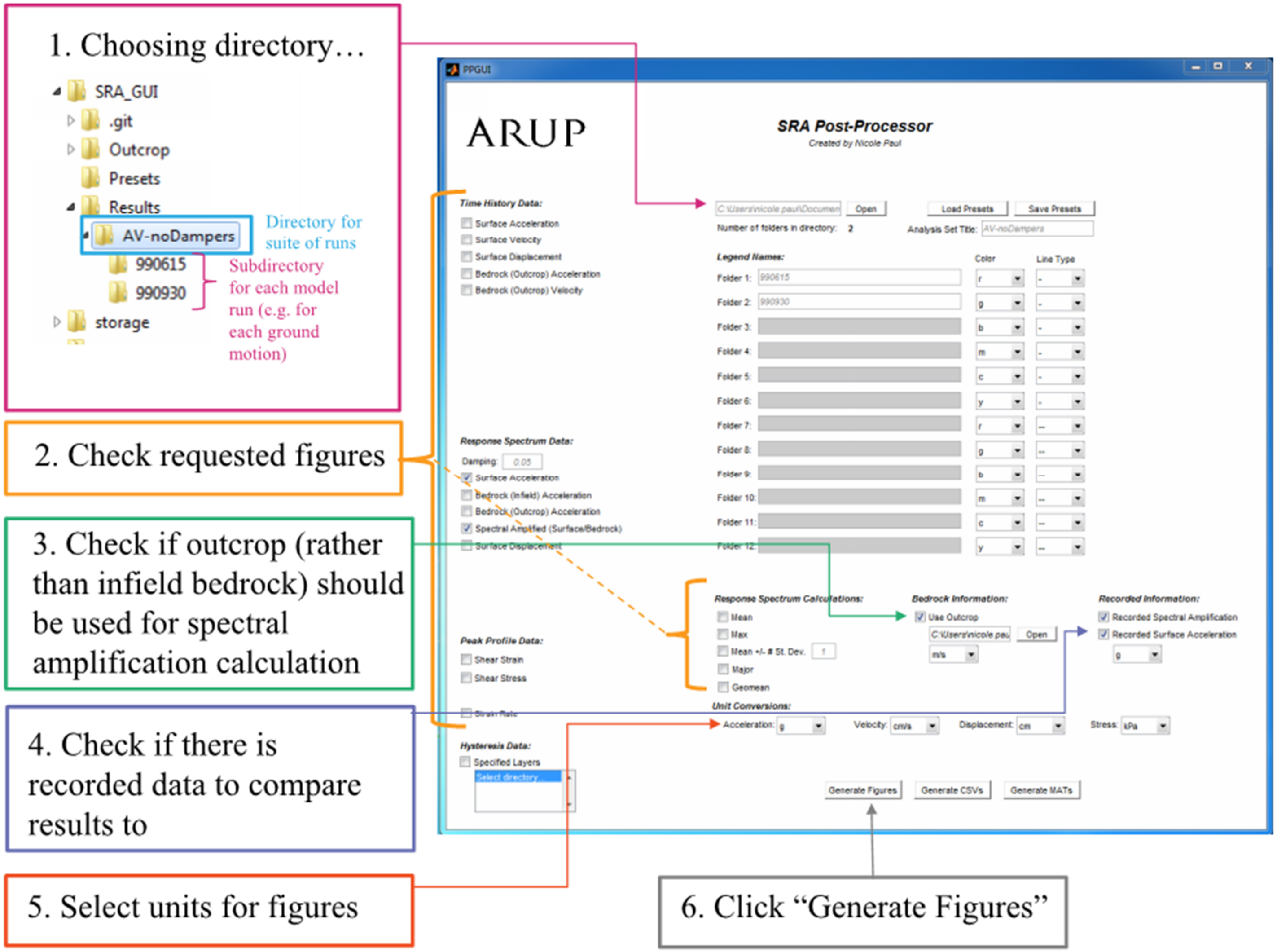
9. Click “Run”

10. Wait until the command window says “SCRIPT COMPLETED” before closing.

All CSV’s will be saved in the same directory as your THF file.

B. Using Matlab GUI …

Open GUI by typing in >> `PPGUI_build;`



Get latest version of MATLAB GUI at: https://github.com/nicolepaul/SRA_GUI