

Introduction to Algorithms and Programming

Assignment #1

You have been given acceleration, velocity and displacement histories of a component of an earthquake from the PEER Strong Motion Database.

You are required to load the acceleration, velocity and displacement records into MATLAB and convert them into column matrices using the fileload.m script available on the website.

- a. Download the earthquake histories and the fileload.m script into the “work” directory.
- b. Open one of the records and read the file header (Text describing the record). Take a note of “time increment and the number of data points”. If the number of data points is an odd number, simply delete either the first or the last data record on each file. Finally, delete the file headers and save changes to each file.
- c. Now you will need to manipulate the script file to handle your records. Change the file name, number of data points and time increment to relevant places in the script.
- d. Run Matlab and type fileload in the command window. If you have successfully completed the previous steps you will obtain the plots in a new figure.
- e. In the figure window, add title (Name, Date and Component of your earthquake) and place relevant info on plot axes. Save and export the figures to an image file (gif, jpg, bmp etc)

Report

Your report will include the printouts of;

- a. A title page including your student information, date and a brief description (Location, Date and Component information) of your earthquake.
- b. Your modified fileload.m script file.
- c. Your plot image file.

Submission Information

You need to submit your printouts at the beginning of class. Late submissions will be penalized. Submissions after March 30 will not be accepted. You are encouraged to cooperate with fellow students but your work has to be original.