

IM Plot

The code to run these plots reside in the visualization repository

Spatial IM plots

1. Generate summary csv and meta info file using https://github.com/ucgmsim/IM_calculation/blob/master/calculate_ims.py. For further info please refer to [IM Calculation Refactor](#)
2. Identify a station.ll file or a rrup.csv file that contains station and coordinates information
3. Generate .xyz files using https://github.com/ucgmsim/visualization/blob/im_plot/im_plotting/im_plot.py with the following input: (1) summary csv in step 1; (2) station file in step 2.
4. Generate IM plots pngs using https://github.com/ucgmsim/visualization/blob/im_plot/gmt/plot_stations.py

Note: Step 3 is based on the assumptions that (1) summary csv and meta info files are in the same dir; (2) summary csv and meta info files have the same prefix

```
usage: im_plot.py [-h] [-o OUTPUT_PATH] [-c COMPONENT]
                  csv_filepath rrup_or_station_filepath
positional arguments:
  csv_filepath          path to input csv file
  rrup_or_station_filepath
                        path to input rrup_csv/station_ll file path
optional arguments:
  -h, --help            show this help message and exit
  -o OUTPUT_PATH, --output_path OUTPUT_PATH
                        path to store output xyz files
  -c COMPONENT, --component COMPONENT
                        which component of the intensity measure. Available
                        compoents are ['geom', '090', '000', 'ver']. Default
                        is 'geom'
```

Example:

To generate .xyz

```
python im_plot.py ~/kelly_sim_ims/kelly_sim_ims.csv /home/nesi00213/dev/impp_datasets/Darfield/sample_nz_grid.
ll -o ~/xyz_test
```

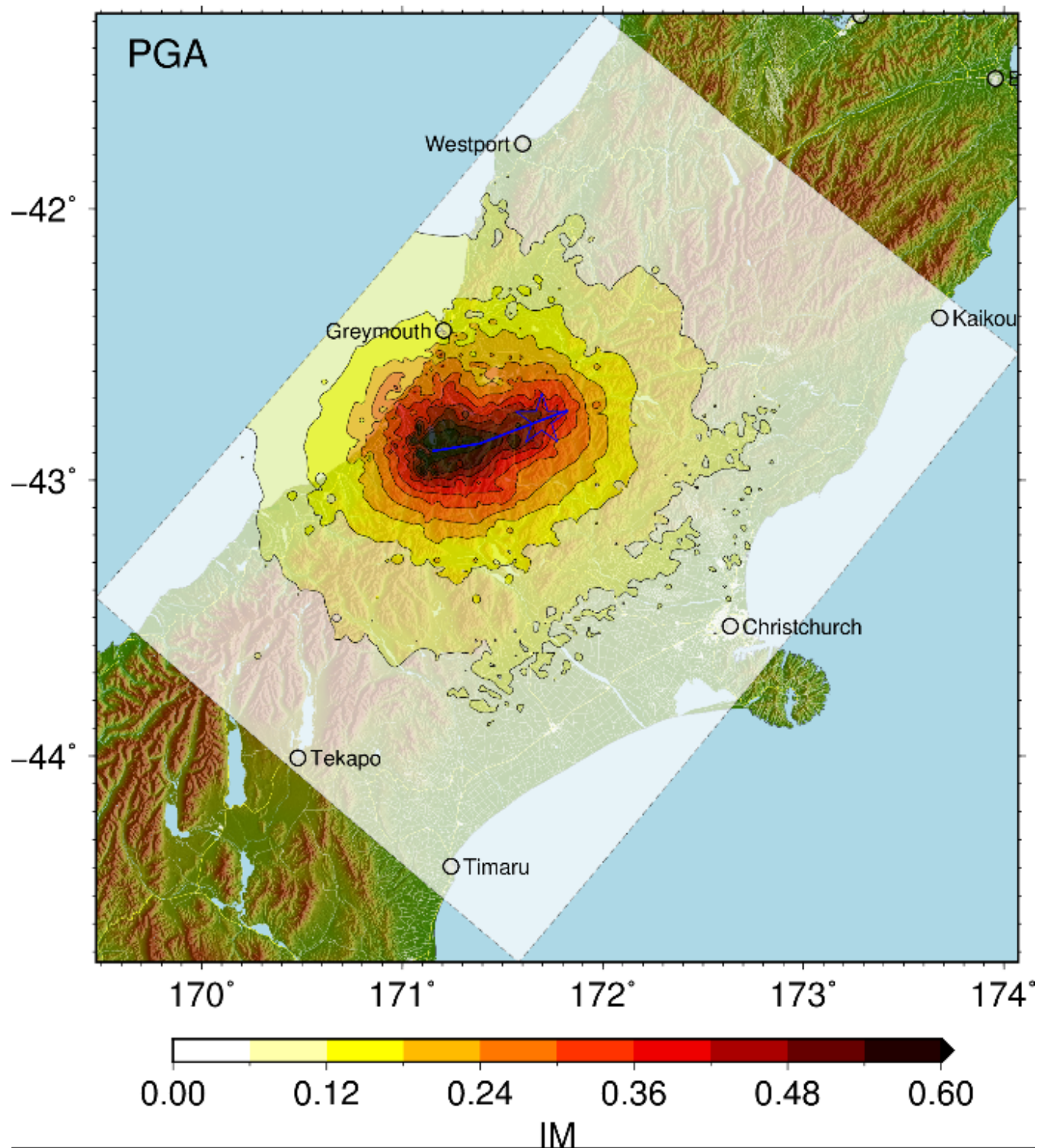
To plot pngs

```
python plot_stations.py ~/xyz_test/nonuniform_im_plot_map_kelly_sim_ims.xyz --out_dir ~/xyz_test --model_params
/home/nesi00213/VelocityModel/v1.64_FVM/model_params_nz01-h0.100
--srf /home/nesi00213/RunFolder/Cybershake/v18p6/verification/Kelly/Kelly_HYP03-29_S1264.srf
```

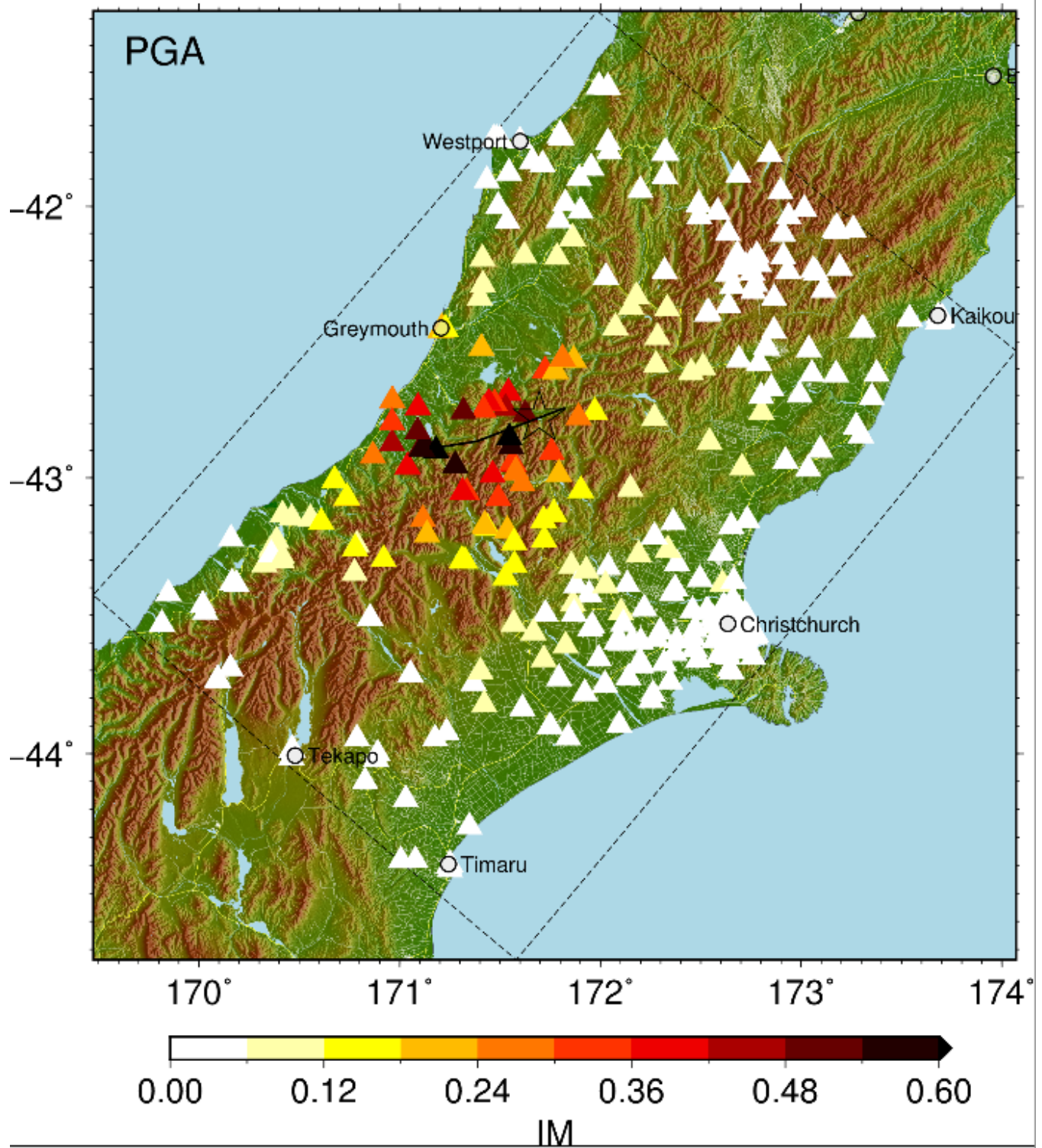
Sample nonuniform plot

Sample uniform plot

IM Plot

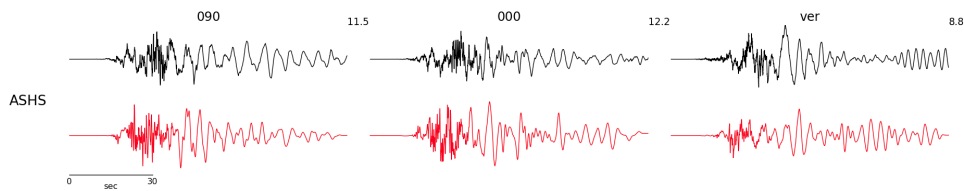


IM Plot



Waveform Time Series

```
usage: waveforms_sim_obs.py [-h] [--sim-prefix SIM_PREFIX]
                             [--obs-prefix OBS_PREFIX] [-v] [-n NPROC]
                             sim obs out
positional arguments:
  sim                  path to binary file or text dir for simulated
                        seismograms
  obs                  path to text dir for observed seismograms
  out                  output folder to place plots
optional arguments:
  -h, --help          show this help message and exit
  --sim-prefix SIM_PREFIX
                        sim text files are named <prefix>station.comp
  --obs-prefix OBS_PREFIX
                        obs text files are named <prefix>station.comp
  -v                  verbose messages
  -n NPROC, --nproc NPROC
                        number of processes to use
```



IM vs Rupture Distance

```
usage: im_rrup.py [-h] [--out-dir OUT_DIR] [--run-name RUN_NAME] [--im IM]
                  [--comp COMP]
                  rrup
positional arguments:
  rrup                  path to RRUP file
optional arguments:
  -h, --help          show this help message and exit
  --out-dir OUT_DIR   output folder to place plot
  --run-name RUN_NAME run_name - should automate?
  --im IM             path to IM file, repeat as necessary
  --comp COMP         component
```

pSA station

```
usage: psa_sim_obs.py [-h] [-s SIM] [-o OBS] [-d OUT_DIR]
                      [--run-name RUN_NAME] [--comp COMP]
optional arguments:
  -h, --help          show this help message and exit
  -s SIM, --sim SIM   path to SIMULATED IM file
  -o OBS, --obs OBS   path to OBSERVED IM file
  -d OUT_DIR, --out-dir OUT_DIR
                      output folder to place plots
  --run-name RUN_NAME run_name - should automate?
  --comp COMP         component
```