

# How to create Rupture Model Manually

1. Clone the git repository : [Pre-processing](#)
2. cd SrfGen folder
3. make a copy of setSrfParams.py from template

```
cp setSrfParams.py.template setSrfParams.py
```

4. edit all parameters related to specific type of rupture model you want ( and remove all unwanted ones)

(the comments in setSrfParams should indicate what parameters are for what type)

or check for required parameters from createSRF.py or below

```
if TYPE == 1:
    # point source to point source srf
    srf = CreateSRF_ps(LAT, LON, DEPTH, MAG, MOM, STK, RAK, DIP, DT, \
        PREFIX, stoch = STOCH)
elif TYPE == 2:
    # point source to finite fault srf
    srf = CreateSRF_ff(LAT, LON, MAG, STK, RAK, DIP, DT, PREFIX, \
        SEED, depth = DEPTH, mwsr = MWSR, \
        stoch = STOCH, corners = True, \
        genslip_version= GENSLIP, rvfrac = RVFRAC, slip_cov = SLIP_COV, \
        rough = ROUGH)
elif TYPE == 3:
    # finite fault descriptor to finite fault srf
    srf = CreateSRF_ff(LAT, LON, MAG, STK, RAK, DIP, DT, PREFIX, \
        SEED, FLEN, DLEN, FWID, DWID, DTOP, \
        SHYPO, DHYPO, stoch = STOCH, corners = True, \
        genslip_version= GENSLIP, rvfrac = RVFRAC, slip_cov = SLIP_COV, \
        rough = ROUGH)
elif TYPE == 4:
    # multi segment finite fault srf
    srf = CreateSRF_multi(M_NSEG, M_SEG_DELAY, M_MAG, M_MOM, \
        M_RVFAC_SEG, M_GWID, M_RUP_DELAY, M_FLEN, \
        M_DLEN, M_FWID, M_DWID, M_DTOP, M_STK, \
        M_RAK, M_DIP, M_ELONG, M_ELAT, M_SHYPO, \
        M_DHYPO, DT, SEED, PREFIX, CASES, \
        genslip_version= GENSLIP, rvfrac = RVFRAC, slip_cov = SLIP_COV, \
        stoch = STOCH, rough = ROUGH)
```

5. Run setCreateSRF.py

Note: remember to move files to agreed structure for automated workflow if using auto-submit

## Optional:

plotting the SRFs

plotting scripts should run at the end of the model generation, but if it did not, or you need to re-run some plots; you can run plot\_srf\_square.py and plot\_srf\_map.py

Note: the plotting may fail if visualization repository are not added into the path. If this happens, clone [visualization](#) repo. (PS. to run plotting scripts GMT must be built and installed on the machine you are running)

1. clone [visualization](#) repo

optional: 1a. add gmt folder to system PATH ( this will prevent future crashes for running createSRF.py)

2. build gmt. ( this is necessary for plotting)

you can download corresponding build/release from [GMT](#) or [rebuild them](#)