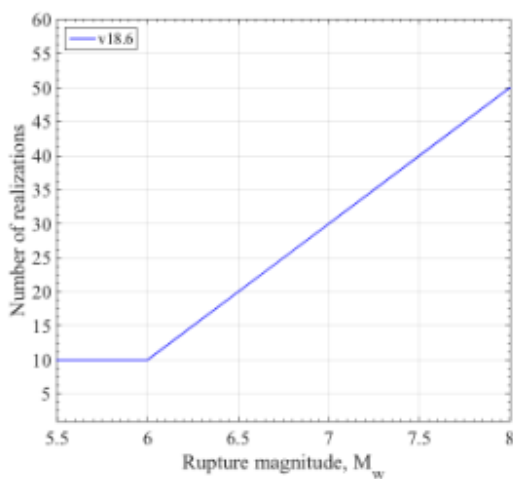


Step 2: Determine the number of simulation jobs for a given fault



UPDATE 27 Oct 2023 The information on this page is obsolete and misleading : the Matlab code has a bug and links number of realisations to a wrong fault. Use Python code in [Step 3](#) page

At this step, we calculate how many simulation jobs are needed for each fault given a model based on rupture magnitude (such as the one below):



Note that the median rupture magnitude used in this process is based on Leonard 2010 magnitude scaling relationship which differs from the values prescribed in Stirling et al 2012 national hazard model. This file contains the fault name, median rupture magnitude based on Leonard 2010, length, width, and rake of all the finite faults in the national hazard model: [FaultName_Length_nhmWidth_leonardWidth_Rake_LeonardMedianMag_nhmMag.txt](#)

A simple code as the one written in matlab here ([run_C18p6_NumSim.m](#)) can be used to determine the number of simulations for the considered faults. This code takes three inputs: [FaultName_Length_nhmWidth_leonardWidth_Rake_LeonardMedianMag_nhmMag.txt](#)

1- A model (as shown in the above figure)

2- A file containing the fault name, median rupture magnitude based on Leonard 2010, length, width, and rake of all the finite faults in the national hazard model:

Note: If the magnitude and geometry of faults are kept as those prescribed in NHM, the file will still be relevant and does not need to be changed (considering the fact that M_w is calculated based on the median of the Leonard model). If M_w uncertainty is added, then this file should be changed.

3- A file containing the list of the faults that are considered in for a given Cybershake run (such as [CS_list_v18p6.txt](#)) which is obtained in Step one [Step 1: Determine the list of faults considered](#)

The output of this code is a file: e.g. [output_fault_selection_c18p6.txt](#)

A python3 version of the above matlab script is available here:

[Simulation count calculator in Python3](#)