Definition of input parameters
- Size of the domain $\Omega$
- Size of the asperity and effective area
- Algorithm parameters such as strength and load-transfer value

Generation of domain $\Omega$ with $N_x \times N_y$
Generation of asperity size and domain $R_{asp}$
Location of $R_{asp}$ via coordinates of the epicenter
Each cell is defined as either background or asperity cell

First step of the simulation ($k = 1$, $\delta = 0$):
- Uniform distribution of stress load/rupture probability to each cell
- Strength allocation to background and asperity cells (plus variation therein)

**FBM algorithm**

**Synthetic catalog**
Statistical analysis (e.g., GR law, MOL, Hurst exponents, etc.)
Generation of output plots and files