

Epidemic Type Aftershock Sequence (ETAS)

Model proposed by *Ogata* [1988] in order to describe the temporal and spatial distribution of seismicity

- each earthquake can be both a mainshock, an aftershock and a foreshock
- each earthquake triggers aftershocks according to the Omori law

$$N(t) = \frac{K(m)}{(t + c)^{1+\theta}}$$

- the number of aftershocks depends on the mainshock magnitude :

$$K(m) = K 10^{\alpha m}$$

- aftershock magnitudes follow the Gutenberg-Richter distribution, independently of the time and of the mainshock magnitude

$$P(m) \sim 10^{-bm}$$