Scaling phenomena

Scaling relations can emerge with all kinds of observables
They inform about properties of the process / system under scrutiny

Earthquakes (Richter-Law)

frequency of occurrence ~ magnitude

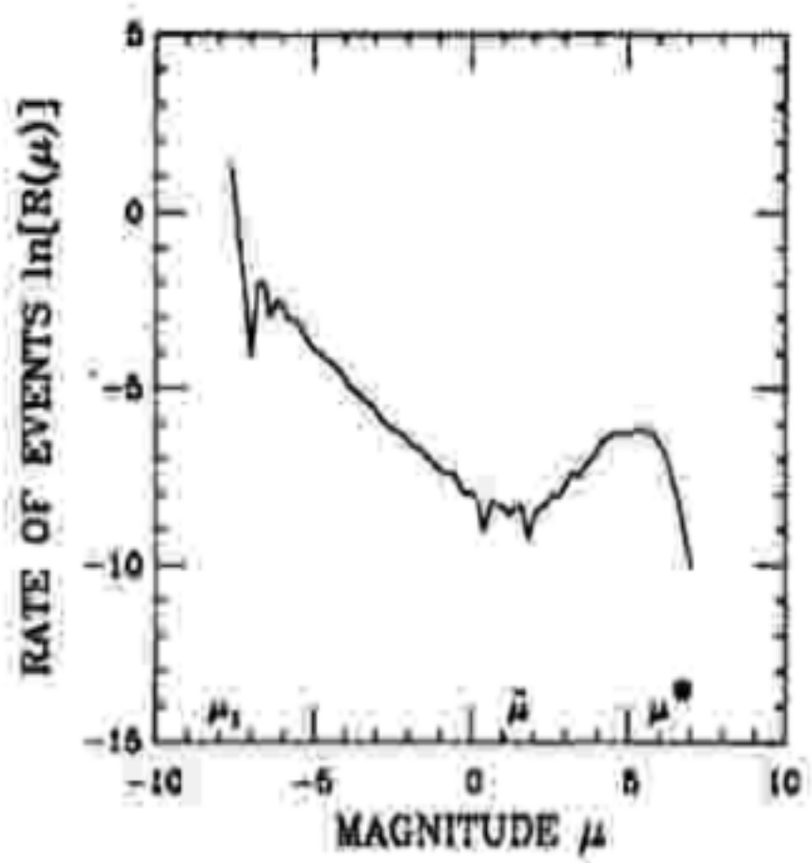
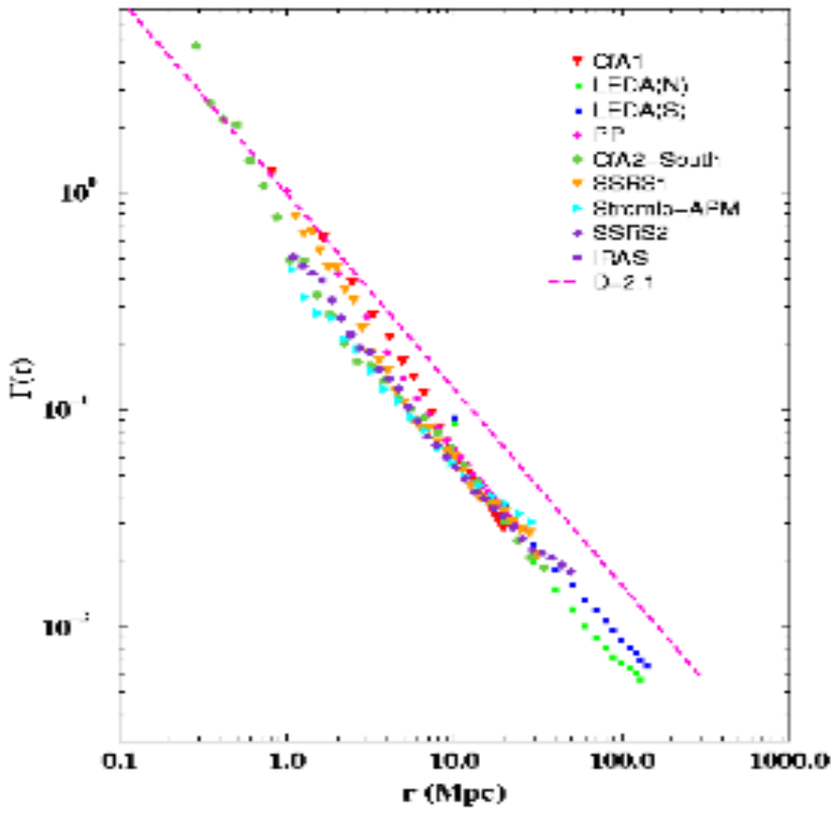


Figure 13: frequency distribution of the slip events (earthquakes) of magnitude μ taken from [53]. Notice the large bump that corresponds to an excess of events of high magnitude.

Distribution of mass in the Universe

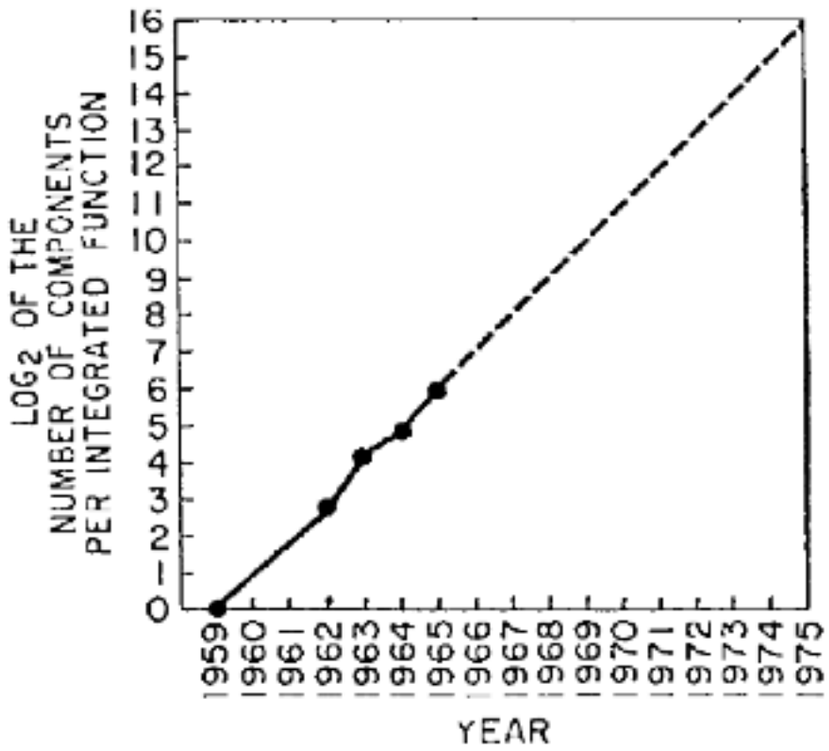
resolution ~ density



Scaling & Growth

Moore's Law:

Predicted if speed of innovations in "cramming more components onto integrated circuits" kept up …



Moore, Gordon E. (1965). "Cramming more components onto integrated circuits"