

Plaats hier uw afbeelding

Radboud University Nijmegen





Behavioral Science Institute

Radboud Universiteit Nijmegen

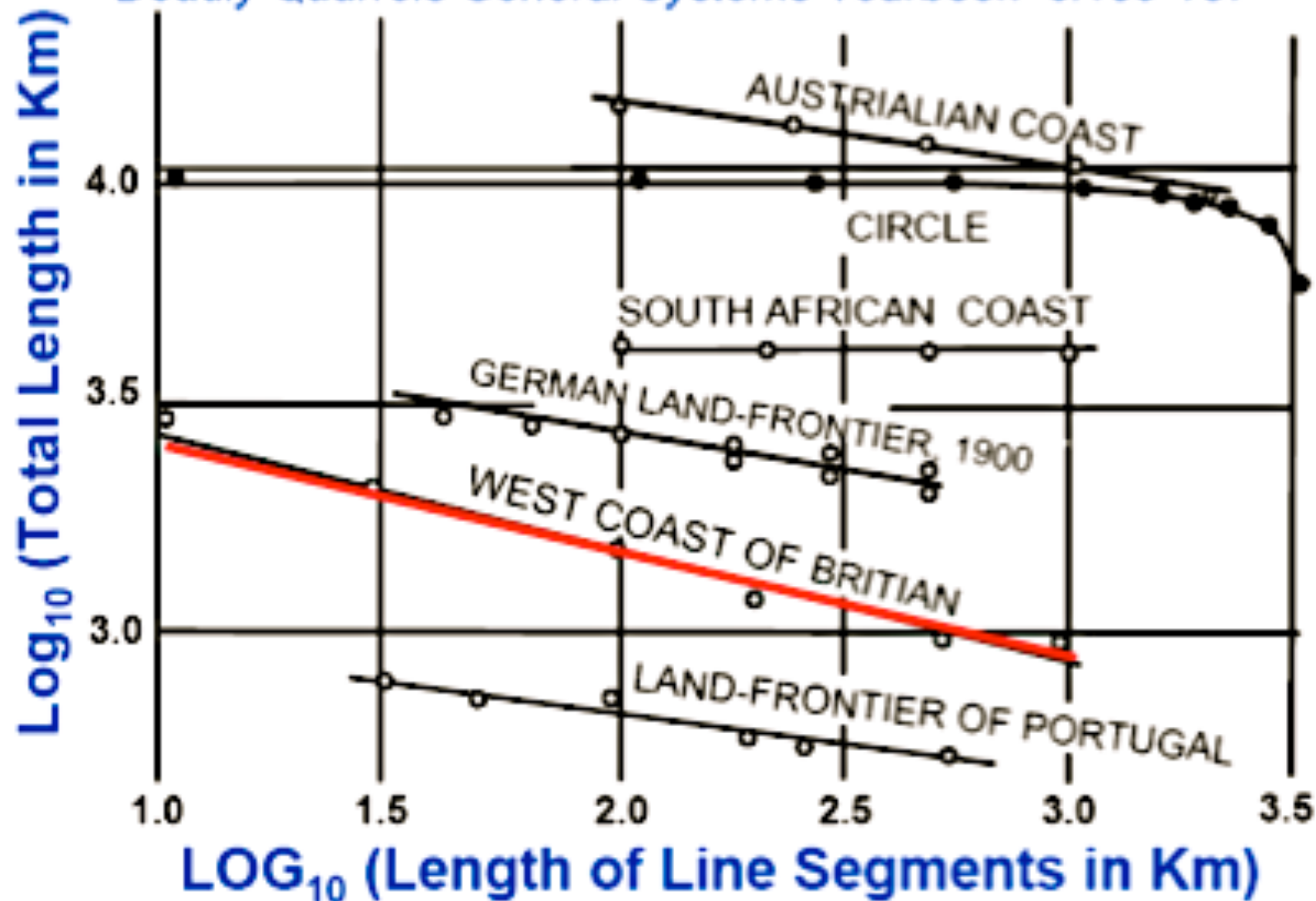


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Learning & Plasticity

How Long is the Coastline of Britain?

Richardson 1961 *The problem of contiguity: An Appendix to Statistics of Deadly Quarrels* General Systems Yearbook 6:139-187



A *power law* scaling relation (LOG scale):
There is no characteristic length, just an indication of **complexity**

Scalene variance.

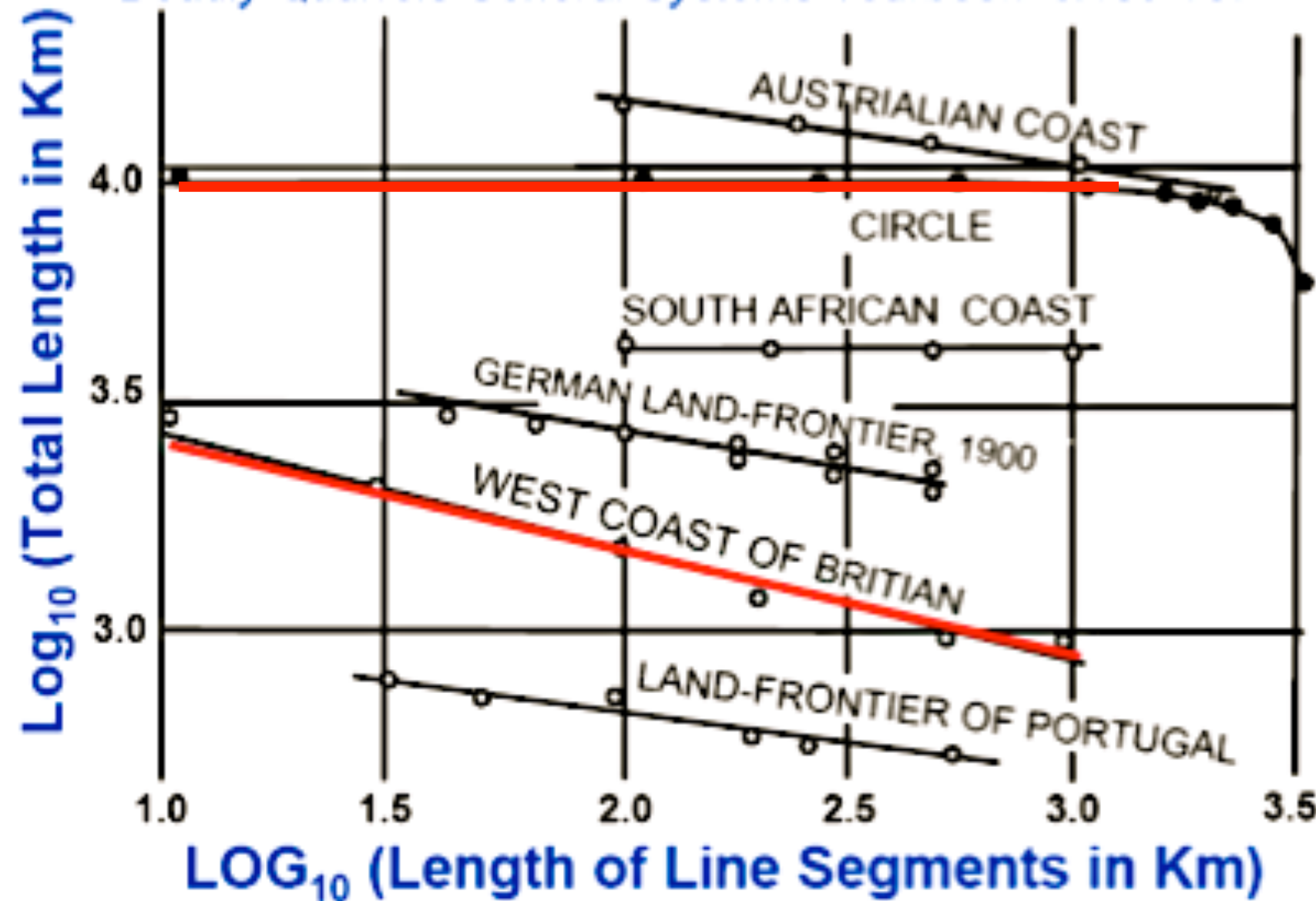




Mandelbrot, B. B. (1967). How long is the coast of Britain? Statistical self-similarity and fractional dimension. *Science*, 156(3775), 636–8.

How Long is the Coastline of Britain?

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Scale invariance...

A power law scaling relation (**LOG scale**):

There is no characteristic length, just an indication of **complexity**

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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 \sim magnitude

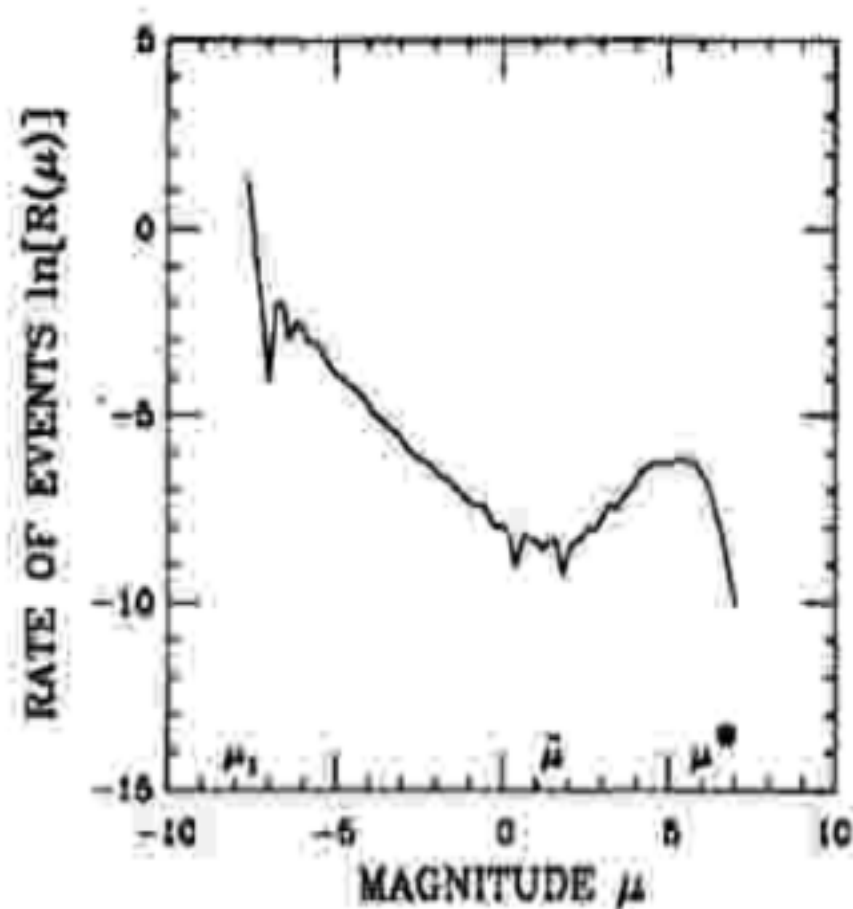


Figure 13: frequency distribution of the slip events (earthquakes) of magnitude μ taken from [53]. Notice the large bump that corresponds to an excess of events of high magnitude.

Distribution of mass in the Universe
resolution \sim density

