HW#9

Prove that ~~the~~ power law for the energy release in an earthquake is a PDF

$$\int_{E_0}^{\infty} P(\epsilon)\,d\epsilon = E_0 \int_{E_0}^{\infty} E^{-2}\,dE = E_0\left[\frac{-1}{E}\Big|_{E_0}^{\infty}\right] = E_0\left[\frac{-1}{\infty} + \frac{1}{E_0}\right] = E_0\left[0 + \frac{1}{E_0}\right] = \frac{E_0}{E_0} = 1$$

$\int_{E_0}^{\infty} P(\epsilon)\,dE = 1$ ∴ it is a PDF

Shoe-Box Experiment

after the shoe-box experiment, I saw many random-sized salt piles that seemed to have random sized avalanches at different times at random.