

Discrimination of explosions and earthquakes : An example based on spectra and source parameters of the 11th May 1998 Pokhran explosion and the 9th April 2009 (about 100km west of Pokhran site near India-Pakistan Border) earthquake

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1. We present various discriminants for an earthquake and a nuclear explosion based on P-, S- and Lg- spectra.
2. Results show that the seismic moment, corner frequency and source dimension of the Pokhran explosion are $\sim 1.58 \times 10^{17}$ Nm, 1.18 Hz and ~ 0.793 km respectively.
3. The yield of the nuclear explosion is estimated to be ~ 50 kt.

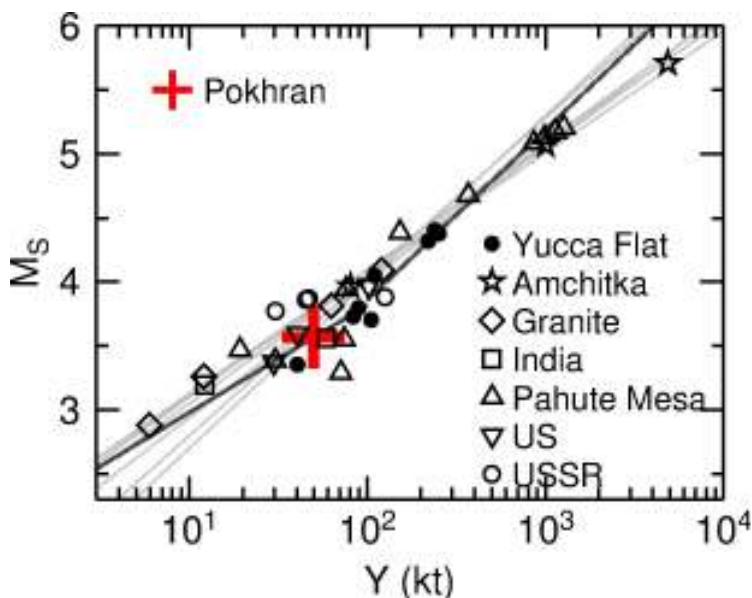


Figure: Various empirical magnitude (M_s) vs yield (Y) relations. The symbols denote worldwide estimation of yields and the red bold cross represents our estimation for Pokhran explosion.

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