Richter Magnitude

Charles Richter (1935)

The maximum seismic wave AMPLITUDE measured as a function of distance from the source on a Wood-Anderson seismograph.

Also referred to as the local magnitude, $M_L$.

Surface Wave Magnitude, $M_s$

The largest amplitude in a surface wave-train with a period of ~20s.

Body Wave Magnitude, $M_B$

The maximum amplitude of P-waves with a period of 1s.

Moment Magnitude, $M_W$

Based on the seismic moment, $M_o = \mu u A$. Gives an indication of the energy released from the entire rupture area.

$$M_W = \frac{2}{3} \log M_o - 6.0$$