

Magnitude

Compute the **best magnitude**, M_I , at each point of a grid of trial epicenters in the felt region. Here, M_I is the mean of M_i , and

$$M_i = [(MMI_i + 3.29 + 0.0206 * \Delta_i) / 1.68],$$

where Δ_i is the distance (in km) of observation MMI_i from the assumed grid point.

Also compute the **total rms error** between observed and predicted intensities, $rms[M_I]$, for the best magnitude, M_I , at the assumed grid point.

Location

The **location** of the earthquake is bounded by contours of

$$rms[M_I] = [rms(M_I - M_i) - rms_0(M_I - M_i)],$$

where $rms_0(M_I - M_i)$ is the **minimum rms** over the grid of potential epicenters. The point associated with the minimum rms is the “**intensity center**.”