

# Magnitude scaling of seismic events at Elliot Lake

Canada Centre for Mineral and Energy Technology = Centre canadien de la technologie des minéraux et de l'énergie - A seismic moment magnitude scale



Description: -

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## Earthquake magnitude potential of the Intermountain Seismic Belt, USA, from surface

We first investigate the degree of closeness of  $M_w$  values with other observed magnitudes  $e$ .

### A seismic moment magnitude scale

The formulation and validation of the  $M_w$  scale were carried out considering the southern California region for lower and intermediate earthquakes.

### Magnitude scaling of seismic events at Elliot Lake (1987 edition)

$M_{wg}$  is computed from low-and high-frequency spectra, and because it is consistent for small, intermediate, and large earthquake events, it will play a useful role as an earthquake magnitude estimator for all earthquake related studies. This study presents mean-value estimates of the maximum earthquake magnitudes that can be expected from 65 of the most... The aim of obtaining a single scale for earthquake magnitudes has led many studies in the past to either develop relationships among various existing scales or develop an altogether new scale to represent a wide range of magnitudes on a single scale.

### A seismic moment magnitude scale

The similarity of the  $M_{wg}$  scale is also tested on 394 global seismic radiated energy values collected from Choy and Boatwright 1995. It is observed that 76% of estimated radiated energy values obtained through the  $M_{wg}$  scale show closer agreement than with  $M_w$  to the observed radiated energy values.

## Earthquake magnitude potential of the Intermountain Seismic Belt, USA, from surface

In this study, an endeavor has been made to extend the moment magnitude scale to include lower and intermediate magnitudes in a global context emphasizing the use of body waves, particularly P waves, in which data are abundant. Paleoseismology has revealed the presence of major active faults throughout this region, some of them extending through densely populated area. .

## Earthquake magnitude potential of the Intermountain Seismic Belt, USA, from surface

The greater accuracy of the  $M_{wg}$  scale over the  $M_w$  scale at different magnitudes i. © 2019, Seismological Society of America. Although a reliable and standardized estimation of earthquake size is a basic requirement for all tectonophysical and engineering applications, different magnitude scales estimate different values for the same earthquake, thereby making such studies inadequate.

For this exercise, use the Richter scale equation  $M =$

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