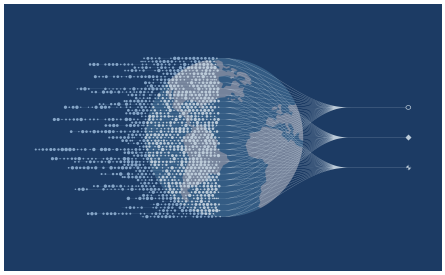

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of the local magnitude scale (M_L) for eastern Cuba

In this study, we developed a local magnitude scale for the southeastern region of Cuba—the part of the island exposed to the greatest seismic hazard due to its proximity to the Oriente fault system. From the 2011–2021 Cuban catalog, 7750 earthquakes with ML > 2 were selected, distributed in the region 19°–22° N, 73°–79° W, and recorded by at least four seismic stations within 500 km of the hypocentre. The resulting input data set includes 33 916 amplitude measurements of the horizontal components. We set up the whole linear regression analysis procedure to obtain the formula for the local magnitude in the International Association of Seismology and Physics of the Earth's Interior form. In a three-step procedure, we removed the outliers; searched for the parameters n, K, and Si that minimize the unbiased sample standard deviation of the residuals; and set the anchor point for the parameter C. Thus, the new formula for the local magnitude ML is defined as follows: M_L=log_10(A)+1.000 log_10(R)+0.003R-1.963, in which A is the peak amplitude in nanometers simulated with a Wood–Anderson sensor and R is the hypocentral distance in kilometers. We also calculated the station correction factors S for each station included in the analysis

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