



A comparison of the Brazilian regional magnitude, m_R , with the teleseismic m_b for intraplate sub-Andean earthquakes

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Abstract

Intraplate earthquakes in Brazil are often measured with the P-wave regional magnitude m_R , a scale developed for the attenuation characteristics of the Brazilian stable cratonic lithosphere. In the range 3.5 to 5.5, the regional magnitude compares well with the short-period P-wave teleseismic magnitude m_b . Many crustal earthquakes in the sub-Andean region are recorded by the Brazilian Seismic Network (RSBR) with paths crossing mostly the stable continental interior. We compared the regional magnitudes m_R of sub-Andean events, measured by RSBR, with the teleseismic m_b to see if m_R would be applicable to sub-Andean events. The RSBR m_R magnitudes tend to be 0.5 units lower than the ISC m_b values. This may imply that the upper mantle beneath the sub-Andean region attenuates P waves more strongly than the Brazilian lithosphere.

PRESENTATION

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