

The effects of the 26/05/19 Lagunas Earthquake on the Peruvian jungle

Jorge ALVA HURTADO, Perú, Colegio de Ingenieros del Perú, Miraflores, Peru and Carmen ORTIZ, Researcher – Civil Engineering Graduate School - Universidad Nacional de Ingeniería, Lima, Peru

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Peru is located in a zone of high seismic threat due to the interaction of Nazca and South American plates, as well as the activities of superficial geological faults, which also generate earthquakes of considerable magnitude in the interior of the continent.

These events generate seismic forces that affect structures, which have caused considerable material and human losses in vulnerable buildings on a recurring basis. The most recent high magnitude seismic event was the earthquake of May 26th, 2019 on a scale of $M_w=8$, which was felt in Peru, Colombia and Ecuador. It served as evidence that the greatest damages occurred in the eastern part of the country, which presents soft soils.

In this work, we analyze the records of 44 accelerographic stations in Peru and 21 accelerographic stations in Ecuador to obtain response spectra and spectral analyses, in order to obtain the prevailing amplifications and frequencies for the ground and compare them with the recorded structural damage.

Results indicate that the values for ground amplifications are greater than those proposed by the E.030 Peruvian Standard for Seismic Resistant Design. Moreover, the values for ground periods increased with earthquakes of greater magnitude in comparison with values obtained by measurements of microtremors.