

Arequipa's Contribution to the ILRS Network

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The Satellite Laser Ranging Observatory at Arequipa has provided ranging data to earth satellites for over thirty years. The station's proximity to the Nazca/South America (or Nazca/Altiplano) plate boundary yields a sensitivity to earthquake events there. The benefits of this sensitivity to our knowledge of Earth behavior need not compromise the use of Arequipa data for conventional SLR applications. The motion of the Arequipa station is shown to be uniform during aseismic periods, when it can be modeled as well as any station located far from a fault zone. Furthermore, Perfettini et al. (2005) provide a model of co-seismic and post-seismic motion which matches the quality of stable plate assumptions. The model is driven by seismicity observations in the Andes region, and provides a description of the observed horizontal motion of the station caused by the 2001 Southern Peru earthquake which is an improvement over purely empirical approximations. Refinement of this technique, enhanced by improved definition of the vertical component of motion in the region, allows Arequipa to fully contribute to the goals of the Space Geodesy Project.