

## **Velocity Field in Central Andes as Inferred from Space Geodetic Techniques.**

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We have used space geodesy to study the convergence between the Nazca and South American plates. This convergence produces a wide zone of deformation (400 - 1000 km) as well as being responsible for the formation of the high Andes and calc-alkaline volcanism. GPS observations were carried out in 1994 and 1996 at 43 geodetic monuments distributed in Peru and Bolivia as part of the Nazca-South America Plate Motion Project (SNAPP). Results of these two campaigns allowed the determination of a preliminary velocity field for the Central Andes.

New observations at 35 stations (29 in Peru and 6 in Bolivia) were carried out in 1999 by UM (University of Miami), CIW-DTM (Carnegie Institution of Washington) and IGP (Geophysical Institute of Peru). The new data shows that during inter-seismic cycle the elastic strain accumulation reaches a maximum of 35 mm/yr which should be released partial or totally in future earthquakes. The new results also indicate that crustal shortening is occurring at a rate of 10-15 mm/yr east of the Andes, a process that presumably contributes to the formation of the Andes and the high Altiplano plateau and constrain the amount of seismic coupling between the Nazca and South American plates.