**Surface Deformation of Central Andes Volcanic Zone by InSAR Technique**

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Abstract

Decadal trends of volcanic deformation in the Central Andes Volcanic Zone (CVZ) are identified with Interferometric Synthetic Aperture Radar (InSAR) stacks and time series velocity maps covering an area 19°S–27°S and 66°W–69°W by combining over 750 ERS and Envisat interferograms from two descending and three ascending tracks. The results reveal: Cerro Blanco continues –1.0 cm/yr deflation since 1995; uplift at Lazufre began between 1997 and 2000 and has gradually accelerated to 3.5 cm/yr since 2005 and uncovered two previously undocumented deformation centers: Cerro Overo and Putana Volcano: Cerro Overo exhibits a transition from steady –0.4 cm/yr deflation to 0.5 cm/yr inflation over several years; Putana Volcano underwent a short-lived episode of uplift between 13 September 2009 and 31 January 2010, with a maximum uplift of 4.0 cm.

Uturuncu volcano continues 1.0 cm/yr monotonic uplift since 1992 and shows evidence for a broad moat of subsidence surrounding the uplifting region. The ongoing uplift and peripheral subsidence may result from a large mid-crustal diapir fed by partial melt from the Altiplano-Puna Magma Body.

Reference:

Henderson, S. T., and Pritchard, M. E. (2013) **Decadal volcanic deformation in the Central Andes Volcanic Zone revealed by InSAR time series.** *Geochem. Geophys. Geosyst* 14, 1358–1374.

Fialko, Y., and Pearse, J. (2012) **Sombrero uplift above the Altiplano-Puna magma body: Evidence of a ballooning mid-crustal diapir**, *Science* 338, 250–252.