



Seismic activity in the transitional segment of Southern Andes after Maule 2010 megathrust earthquake

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It has been shown that after large magnitude earthquakes the region of volcanic arc affected by the megathrust slip is marked by an increase of volcanic activity in the following decades. The $M_w = 8.8$ Maule 2010 earthquake induced a rupture zone about 500 km long spanning from 33.5°S to 38.5°S. GPS and InSar data show that several volcanic edifices in the Southern Andes underwent a rapid subsidence (from days to months) after the Maule earthquake. To identify the post seismic deformation taking place in the volcanic arc after the Maule earthquake we deployed 20 seismic stations from November 2013 to March 2015 from 35°S to 39°S. We recorded ~ 600 seismic events larger than $M_w = 2.0$, concentrated along the slab and beneath the volcanic chain. No events were detected at depths greater than 60 km beneath the volcanic arc. After a preliminary localization, the crustal events were relocated using an improved 1D velocity model. For the largest seismic events we inverted for moment tensor solutions. The moment tensor solution suggest a dominant N-NNE dextral strike-slip local stress field regime. This is in agreement with the direction of ancient geological structures inferred in the basement that were suggested to be reactivated by supra-lithostatic fluid pressures.