



TerraSAR-X Small Baseline interferometry of Popocatepetl volcano, Mexico.

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Popocatepetl is an active 5426 m high stratovolcano, with a steep-walled, 400 by 600 m wide crater. It is located 70 km southeast of Mexico city, and its activity potentially influences up to 25 million people. More than 15 major eruptions occurred in historic times, the last one in 1947. The year 2012 has been a highly active one, with numerous ash plumes in mid-April, and explosions during July-October.

We have acquired TerraSAR-X images of Popocatepetl, and the surrounding area, using strip and spot mode, covering this period. We have created small baseline interferograms from TerraSAR-X strip mode images, using the Stanford Method for Persistent Scatterers (StaMPS) software. Of the resulting interferograms, several show medium to good coherence on the lower and upper flanks of the volcano and some are even coherent in the crater area. We further analysed the data that cover the time period from 27 march 2012 to 22 october 2012. During this time period the volcano has been very active, displaying on and off: gas and ash plumes, explosions injecting incandescent fragments up to 1 km from the crater and even ashfall in municipalities up to 50 km away. The short revisit time of TerraSAR-X of 11 days increases the chances of a coherent image during such active periods. We present the preliminary results from this unique data set.