

## Postseismic crustal deformation following the 2008 Iwate-Miyagi Nairiku Earthquake detected by ALOS/PALSAR

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We detected postseismic crustal deformation signal following the 2008 Iwate-Miyagi Nairiku Earthquake by Interferometric Synthetic Aperture Radar (InSAR) analysis, using L-band ALOS/PALSAR data.

We conclude that the postseismic deformation decayed quickly after the main-shock (14 June) because clear surface deformation can be identified only for three interferograms with master images acquired 9 and 10 days after the main-shock. Two interferograms of ascending orbit (path 402, off-nadir angle 34.3 degree) acquired after the main-shock (20080623-20080808 and 20080623-20080923) indicate clear length changes in the line of sight (LOS) direction along the eastern face of Mt. Kurikoma, and to the east and west of the main-shock epicenter. As for the descending orbit (path 53, off-nadir angle 41.5 deg), one interferogram after the main-shock (20080624-20081109) also indicates LOS change to the east and west of the epicenter.

To the east of the main-shock epicenter, the LOS pattern is quite consistent with a postseismic convergence toward a north-south trending border line which is almost identical to a line of coseismic displacement discontinuity detected by a pixel matching technique (Takada et al., 2009 EPS, in revision). Few earthquakes occurred to the east of this border line, and many occurred to the west. With those extremely high spatial resolution data, we conclude that a west-dipping thrust motion to the east of the epicentral area had lasted at least over 10 days after the main shock. The LOS signal to the west of the main-shock epicenter indicates eastward and/or downward displacement in the proximity of a line of coseismic displacement discontinuity detected by the pixel matching technique. Thus, it is highly possible that the postseismic slip on the conjugate fault system (i.e., east and west dipping reverse faults) across the epicenter occurred.

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