

Abstract Details

<u>AOGS 1st Annual Meeting</u> > <u>Interdisciplinary Working Groups</u> > Postseismic deformation of the 1995 Hyogo-ken Nanbu earthquake revealed by JERS-1/InSAR >

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Title: Postseismic deformation of the 1995 Hyogo-ken Nanbu earthquake revealed by JERS-1/InSAR

Abstract:

The Hyogo-ken Nanbu Earthquake (M=7.3) hit Kobe city and neighboring area in 17 Jan. 1995. Co- and post- seismic deformations were observed by many geodetic surveys. We applied SAR interferometry (InSAR) to detect more spatially detailed postseismic deformation field after this earthquake. SAR data used in this study were acquired in Feb. 1995 and Sep. 1998 (recurrence time is 1320 days) by JERS-1 satellite installed L-band SAR. These data were processed by GSISAR coded by Dr. Mikio Tobita and Dr. Satoshi Fujiwara of Geographical Survey Institute of Japan. Good coherence is obtained and atmospheric disturbance is few, and therefore accurate crustal deformation is expected. Around the south end area of Noiima Fault in Awaji Island, the fringe pattern which shows postseismic deformation appeared. It indicates that the northwest side of the fault approached the satellite 5cm in line-of-sight direction component. The direction of coseismic movement obtained from photogrammetric surveys was eastward and upward, and it was the direction approaching the satellite. In the northern area from there, it seems that there is no fringe that shows postseismic deformation. The direction of coseismic movement obtained from photogrammetric surveys was eastward and downward, and it is the low sensitivity direction for this InSAR observation. It may suggest that the postseismic deformation was caused but it could not be observed by InSAR. Furthermore, the uplift (approaching to satellite) coseismic deformation was detected in the north end area of Awaji Island, and such deformation pattern was also obtained in postseismic deformation field by InSAR. Thus it seems that the postseismic deformation pattern is similar to coseismic deformation pattern. Although such similarity was already obtained from GPS measurements with more spatially sparse observation network [1], it is interesting that it was also obtained in the narrow area around the fault. In future study, we will attempt to investigate from more detailed analysis.

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