Geophysical Research Abstracts,
Vol. 10, EGU2008-A-05769, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-05769
EGU General Assembly 2008

Surface deformation analysis using persistent scatterers technique: a case study of southwestern Taiwan area

H. Tung (1), J.-Y. Yen (2), J.-C. Hu (1)

(1) Department of Geosciences, National Taiwan University, Taipei, Taiwan, (2) Institute of Earth Sciences, National Hualien University of Education, Hualien, Taiwan (r95224206@ntu.edu.tw)

Differential Interferometric Synthetic Aperture Radar (D-InSAR) technique has increasingly been applied in geosciences as a powerful tool to monitor land surface deformation. In addition, the large archive of SAR data enable us to monitor ground deformation continually. However, temporal and spatial decorrelation of radar signals have prevented this technique from more frequent utilization. An advanced InSAR processing technique that tracks the signals of discreted point-wise targets called Persistent Scatterers Technique (PSInSAR) was herein applied to our research area in order to better understand the active deformations through time. The advantage of PSInSAR method allows us to know the deformation of these discrete points that were minimally affected by decorrelation of radar signals through time.

The active orogeny of Taiwan generated large amount of surface deformation that were partitioned throughout the island, which provides a great opportunity for analyzing tectonic displacements through Interferometric methods. Here we presented a PS-InSAR result deduced from 1996-2000 time period in the tropical area of southwestern Taiwan. We combined the PSInSAR, geodetic measurements and morphostructural analysis in study area, and showed that the research area is situated within a compressive regime with continually uplift, it reveals part of the deformation field of an active tectonic collision area.