

Geodetic Interferometric SAR: Status quo of the research

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It is obvious that the crustal deformation researches with InSAR in EU and US are ahead of our country. This is the impression of the author who attended three meetings. ALOS/PI meeting, held in Kyoto in November, 2007, is the opportunity when first products of researches using ALOS/PALSAR data. Several challenging proposals were also presented by domestic and international researchers, which is the evidence of communities' expectation to ALOS/PALSAR.

FRINGE2007, which was held in Frascati, Italy, in November 2007, was a showcase of products using advanced techniques such as PS/CS InSAR, Short baseline technique, atmospheric phase screening, etc. New and future SAR missions were also discussed. ESA will extend the Envisat mission till 2013. They also plan to launch a new mission Sentinel-1 in 2011.

It seems that special emphasis was posed on time series analysis with permanent/persistent scatter interferometry or short baseline technique. Owing to ERS and Envisat, many SAR images were accumulated for several regions and time series of ground subsidence or tectonic motions were reported. It was a surprise that the main controversy was if linear model for temporal variation is adequate made in assumption of PSI/SB analyses.

Another important discussion was the reduction of meteorological/ionospheric disturbances. There were several interesting reports on the challenges using numerical weather prediction model, optometric images etc.

ALOS/PALSAR is definitely attracting interest from researchers all over the world and preliminary results of analyses of its images were also present. Result of interferometry using wide-swath (ScanSAR) images, which may be useful for the study of crustal deformation with long-wavelength such as coseismic/postseismic deformation associated with interplate events, also attracted attendants' interests.

Following FRINGE2007, we held a workshop in Kyoto in January, 2008, inviting a couple of researchers who play key roles in EU and US. We strongly recognized that time series analysis and reduction of tropospheric disturbance are largely behind them, but ALOS/PALSAR and GEONET would help boost studies on crustal deformation with SAR. On the basis of the above recognitions, we would like to propose the strategy in the near future, such as selection of supersites, ie. the target of integrated studies with time series analysis etc.