

Pi-SAR X2のAT-InSAR画像における速度変調効果の解析

Analysis of velocity bunching for along-track interferometric image in Pi-SAR X2

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National institute of Information and Communications Technology (NICT) developed the along-track interferometry SAR (AT-InSAR) with 50cm resolution for the airborne SAR system (Pi-SAR X2) in 2011, and new antennas for the AT-InSAR with 30cm resolution in 2016. The preliminary wave height observation was performed, and it was confirmed that the ocean wave height distribution could be estimated from the sea surface currents measured by the high-resolution AT-InSAR. However, it was difficult to retrieve ocean wave information such as the wave height, period and direction from the sea surface currents with high accuracy because ocean waves imaging mechanism on the SAR image was governed by the nonlinear mapping (the velocity bunching nonlinearity).

In this study, to clarify the relationship the sea surface velocity derived by the ocean waves and it measured by the AT-InSAR, the numerical simulation of the sea surface velocity measured by the AT-InSAR in the Pi-SAR X2 was carried out. In addition, the modulation of the AT-InSAR images by the velocity bunching was evaluated by the comparison between the sea surface velocity measured by the Pi-SAR X2 and it estimated form the directional wave spectra measured by the wave gage.

キーワード：アロングトラックインターフェロメトリ、Pi-SAR X2、波浪計測

Keywords: Along-track interferometry, Pi-SAR X2, Ocean wave measurement