First Studies of IECA"CX/"CSAR System

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Within the framework of the DRAGON project, the Institute of Electronics, Chinese Academy of Sciences (IECAS) continuously had a tight collaboration with the European and the Chinese partners. The contribution can be concluded into two main aspects: the analysis of polarimetric SAR processing, and the development of the IECAS"CX/P"CSAR system. The detailed working list is in the following.

In the analysis of polarimetric SAR processing, studies on unsupervised classification methods employing fully polarimetric SAR data, fire scars detection analysis using polarimetric ALOS PALSAR and Radarsat-2 data. Besides, by incorporating sub aperture processing, a new single pass terrain estimation algorithm using IECAS "Cband" Quad-Pol SAR system is introduced. Next, the depolarization effect is considered during the Freeman-Durden decomposition and illustrated using AgriSAR dataset. Furthermore, a new speckle filter for polarimetric synthetic aperture radar interferometry (PolInSAR) data is proposed.

In the development of the IECA"CX/P"CSAR system, the current status of the system is presented. The processing techniques aiming at main experimental working modes, such as X-InSAR, P-PolSAR, and repeat pass P-PolInSAR, are introduced. First results of the system's test flight, polarimetric calibration processing and corresponding performance analysis are illustrated.