

PRELIMINARY QUANTITATIVE ANALYSIS OF INTERFEROMETRIC COHERENCE DEGREE AND NUMBER OF RESIDUES IN INTERFEROGRAM

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ABSTRACT:

In the practice of InSAR processing, we discovered that there is an intrinsic relationship between interferometric coherence degree of SAR image pair and the number of residues in the corresponding interferogram, rather than they exist independently from each other. Generally speaking, the lower the coherence degree of SAR image pairs is, the more the number of residues in the interferograms will be, and vice versa. Moreover, we calculated the correlation coefficients between the ensemble coherence averages of SAR image pairs and the density of the residues in the corresponding interferograms using about 60 scenes of SAR data, including ERS1/2, JERS and ASAR. The correlation coefficients are around -0.9. That is to say, there indeed exists very strong minus correlation between ensemble coherence averages and fractions of the residues. In order to further describe the intrinsic relationship between them, we established their quantitative relation by using the method of regression analysis, the results show nearly linear relationship between them.

TOPIC: Microwave remote sensing

ALTERNATIVE TOPIC: Image processing and pattern recognition