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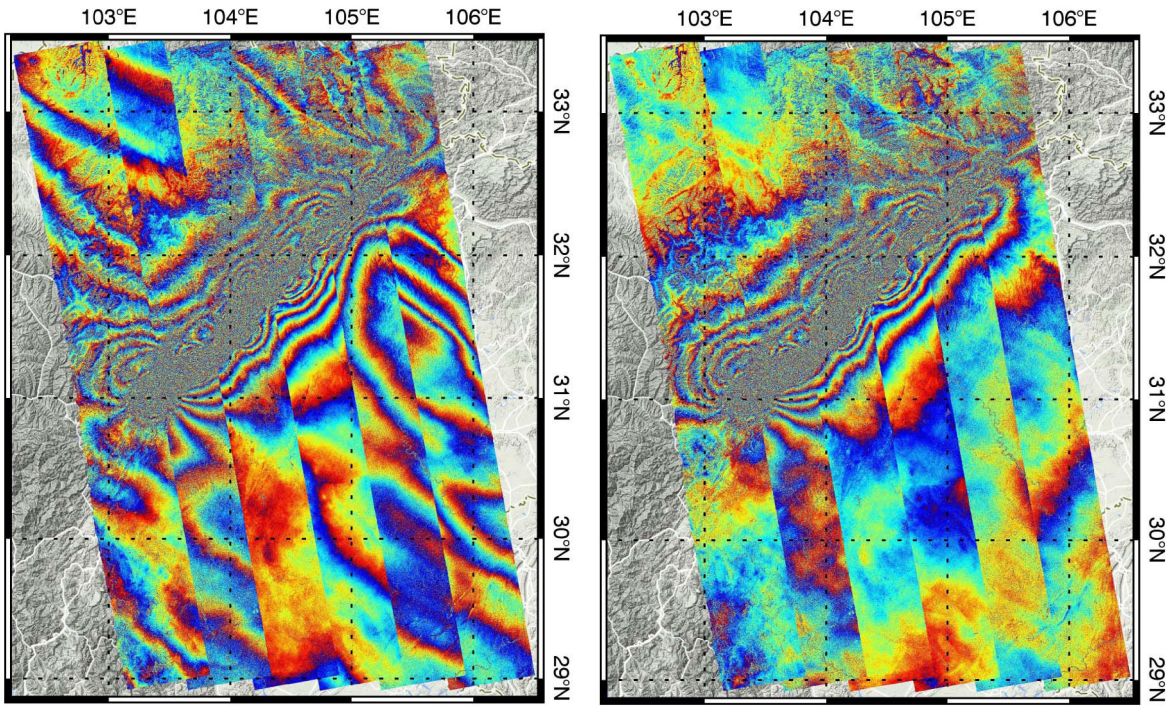

Mosaic of Advanced Land Observing Satellite Phased-Array type L-band SAR interferograms of the 2008 Wenchuan earthquake. Original interferogram disrupted by the variation of the ionosphere electron density (left), and after ionospheric path delay estimation and compensation by using the split-spectrum method (right).

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About the Cover: On May 12, 2008, an earthquake struck the Wenchuan region in central China. The cover shows a mosaic of synthetic aperture radar (SAR) interferograms, produced with Advanced Land Observing Satellite Phased-Array type L-band (ALOS) images, measuring the earthquake deformation. This set of images is what is typically selected by researchers for studying the coseismic deformation pattern of the earthquake. This is because the acquisition dates of these images reduce the influence of postseismic deformation on the interferograms. Unfortunately, this image set is heavily influenced by ionospheric distortions. The ionospheric disturbances are superimposed on the ground motion signal and are clearly visible in the interferogram (left). To cover the whole earthquake, many adjacent tracks have to be joined. Since each track was acquired on a different day, each one experienced a different ionosphere. This is the reason for the strong phase jumps present between tracks in the left interferogram. To enable thorough geophysical modeling of the earthquake, the superimposed ionospheric disturbances needs to be corrected. The split-spectrum method is based on the dispersive nature of the ionosphere and separates the ionospheric component of the interferometric phase from the nondispersive component related to topography, ground motion, and tropospheric path delay. After estimation and removal of the ionospheric contribution, the interferogram (right) only shows the ground deformation produced by the earthquake. Phase jumps between different tracks are also greatly reduced. For more information please see "Toward Operational Compensation of Ionospheric Effects in SAR Interferograms: The Split-Spectrum Method," by Gomba *et al.*, which begins on page 1446.