

Neva Ridge Technologies Presents



Change Detection Tool
for High-Resolution
Spaceborne SARs

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Supported Inputs:

RADARSAT-2 georeferenced
GeoTIFF products (SLC,
SGX, SGF) in all imaging
modes:

- Spotlight
- Ultra-fine
- Fine
- Standard
- Wide
- Extended High
- Fine Quad
- Std Quad

TerraSAR-X complex
(COSAR) and projected
GeoTIFF products (SSC,
MGD) in all imaging modes:

- High-Res Spotlight
- Spotlight
- Stripmap

Supported Outputs:

CCD and ACD products in the
following formats:

- TIFF / GeoTIFF
- NITF 2.1
- raw binary images

Introducing Δ -SAR

Δ -SAR is an easy-to-use software tool for generating change products from SAR data. Specifically designed to work with the native formats of the most recent generation of high-resolution SAR systems, Δ -SAR will form both coherent change detection (CCD) imagery and two-color amplitude change detection (ACD) imagery. These products make subtle changes obvious to an image analyst or to an automated analysis software tool.

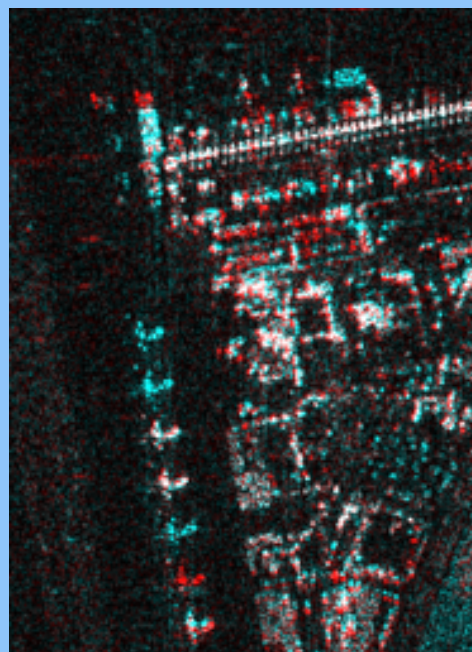
To use Δ -SAR, one selects a suitable pair of input images using the GUI interface. The images should be acquired from similar geometry. The images may be complex images or detected images. In the case of complex imagery, both CCD and ACD products are formed, while detected imagery will only support ACD products.

System Requirements

Δ -SAR is designed to run on UNIX, LINUX, Windows and Macintosh platforms. The Δ -SAR tool is controlled via a Java graphical user interface. Inquire with Neva Ridge regarding specific configurations.

Processing Approach

Δ -SAR ingests the complex or detected SAR imagery provided by the user in the standard native format of the data provider (GeoTIFF for RADARSAT-2 and COSAR and GeoTIFF for TerraSAR-X). This data is registered to sub-resolution precision using an adaptive high-order registration algorithm that can handle terrain effects unique to these high-resolution systems. In the case of detected imagery, a color amplitude change detection (ACD) product is generated. For complex data, a coherent change detection (CCD) image is formed by calculating the complex coherence between the two images, taking into account the natural interferometric phase fringes contained in the data. An ACD product is also generated. The software supports optional ingestion of a digital elevation model for phase flattening as well as terrain correction and output image geocoding.



Color Amplitude Change Detection

Blue: New

Red: Fled

Grey: Unchanged



Day 1



Day 2



CCD

Value added products derived from RADARSAT-2 Data
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