

# TerraSAR-X による災害観測事例

## Disaster mapping by TerraSAR-X data

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### 要旨:

2009 年はブラジル北部洪水、バングラディッシュのサイクロン・アイラの洪水、山口・防府市の土石流災害など国内外で様々な災害が発生しており、被災状況を把握するために TerraSAR-X 画像が取得された。本発表では、まずこれまでの TerraSAR-X の災害時の観測事例をレビューする。そして 2009 年 8 月 11 日に発生した静岡・駿河湾沖地震の解析結果をまとめる。駿河湾沖地震では、地震前後の同じ軌道から撮影した StripMap モード (解像度: 3m) の画像を用いて、以下の 2 つの方法で被災情報の抽出を試みた。

- 1) 2 時期の画像の強度差分より変化域の抽出
- 2) 差分干渉処理により、微小変動の抽出

これらの解析結果を現地調査結果などとの比較を通じて評価した。最後に本解析を通じて、高解像度の X バンド SAR 画像の利活用の方向性について議論する。

### Abstract:

Various natural disasters occurred in 2009, such as flood in northern part of Brazil, flood damage caused by cyclone Aila in Bangladesh, mud flood in Hofu region of Yamaguchi prefecture Japan, and so on. TerraSAR-X data were acquired for carrying out the damage assessment due to such kinds of disasters. In the present study, previously done mapping for the disaster by TerraSAR-X is reviewed and analysis of the earthquake that took place on 11<sup>th</sup> August 2009, around Suruga-bay of Shizuoka prefecture is summarized. Two StripMode (3m) images of the TerraSAR-X were acquired in the same orbit, before and after the earthquake, were utilized by adopting following two methodologies:

- 1) Changed area detection by the difference of backscattering coefficient, and
- 2) Extraction of small ground movement by differential interferometry

The results were evaluated by comparing with the in-situ observations. Finally, applications for the utilization of X-band high-resolution SAR images were discussed based on the conducted analysis.