

DLR-IRIDeS Collaboration on Disaster Science

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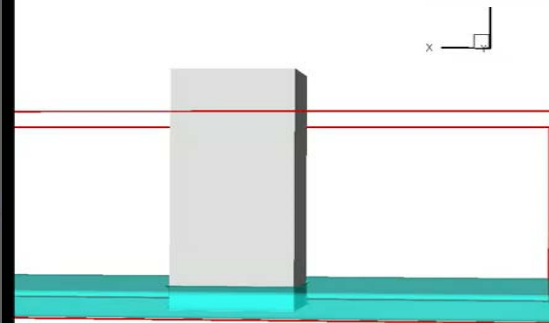
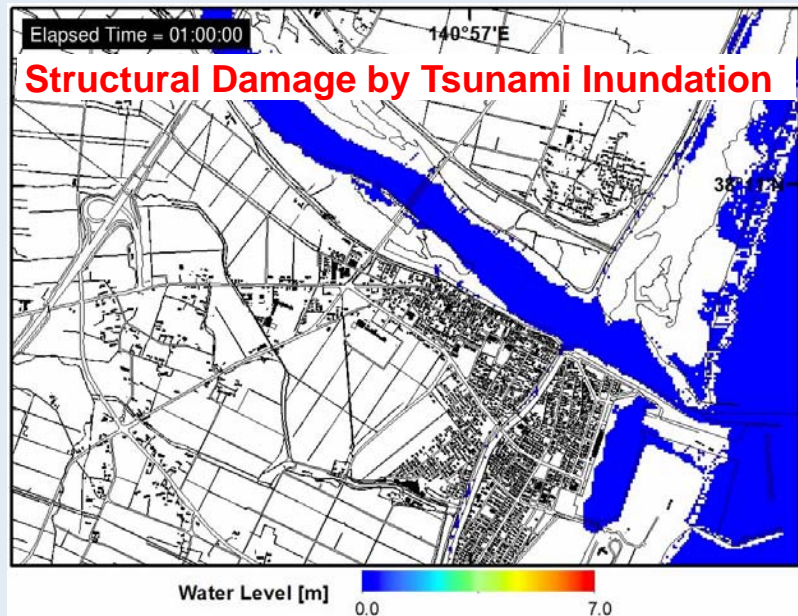
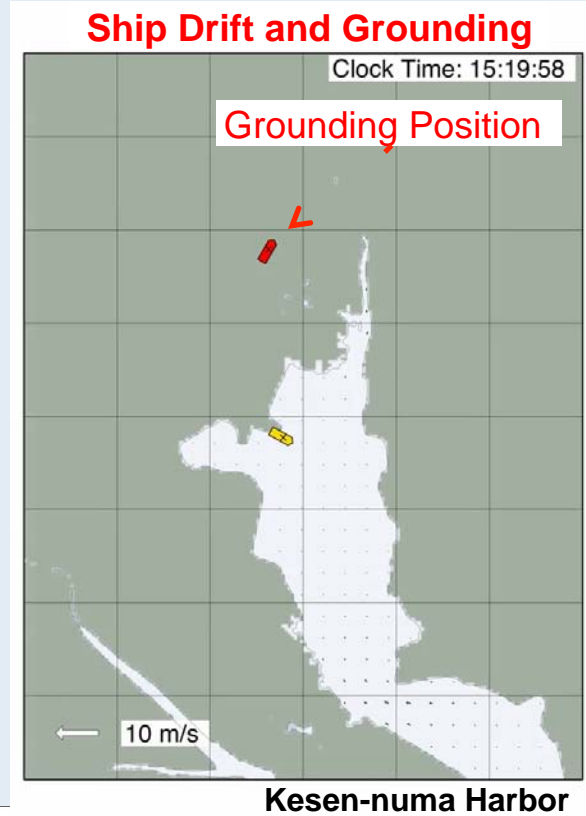
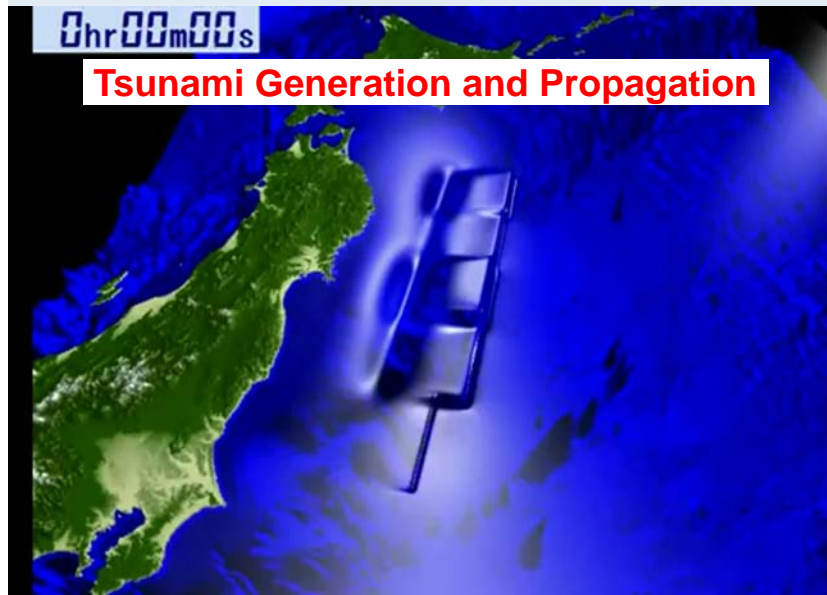
Disaster Management Cycle

Exploiting the lessons from 2011 event to future



PREPAREDNESS, the effort to minimize the losses to respond promptly, sensibly and effectively to future national crisis.

Disaster Simulation is a Powerful Tool



Tsunami Impact on Structure

Real-time simulation ready

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地震から20分内 津波浸水予測

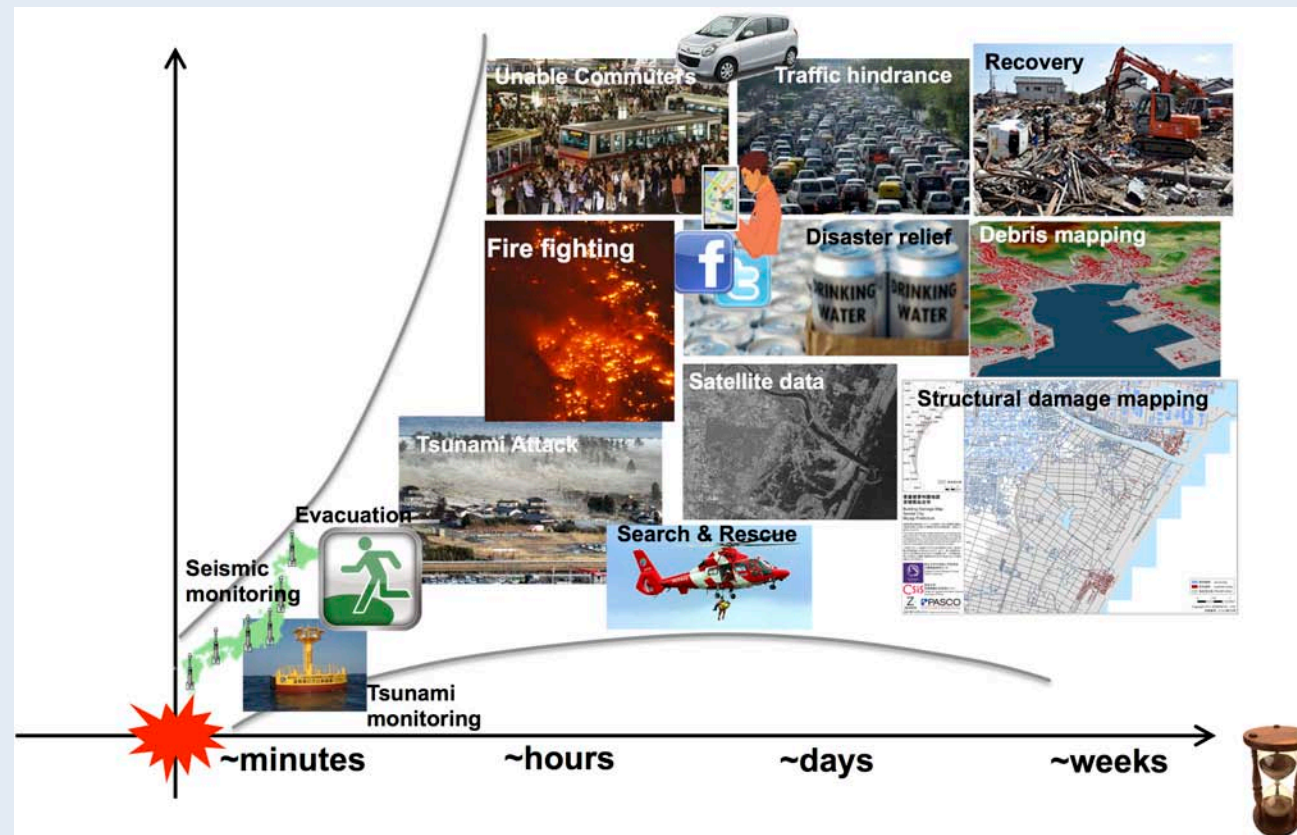
地震発生から20分以内に津波の浸水域を予測するシステムを、東北大が開発中だ。地形を事前に入力し、気象庁などのデータを基にスーパーコンピュータで計算。宮城県石巻市など4市で9月に運用を始め、避難に向けた情報提供をめざす。対象は石巻市のほか、宮城県東松島市、

東北大開発中

静岡市、高知市。地震発生時、気象庁の震源や規模の情報や、GPS（全地球測位システム）を通じて国土地理院が集めた地面のズレのデータから10分ほどで津波の高さや規模を予測。事前に取り込んだ地形や建物の情報から、約10分で10区画ごとの浸水状況を予測する。（小宮山亮磨）

Innovation Challenges/Goals to minimize losses in National Crisis - Preparedness -

1. Acquiring complex disaster images and scenarios (what's happening, what's next, what option/response)
2. Disseminating disaster scenarios to responders to enhance society's resilience



Remote Sensing is also a Powerful Tool

TerraSAR-X, DLR



DFD/IRIDeS Collaboration on Disaster Science, July 2012



DLR-Tohoku Univ.

A new partnership to integrate earth observation technologies and modeling for the contribution of disaster management activities

Research and Development for the application of remote sensing and geosciences

- Identifying and mapping the impact of natural disaster
- Multi-risk modeling
- Design and demonstration of a Data Mining for earth observation and disaster data
- Research on Disaster Information and Early Warning Systems

Activities

- JCC (Joint Coordinating Committee) : 2012, 2013
- Sendai Workshop : 2012
- Exchange : Christian Geiss (2013), Hideomi Gokon (2013-2014), Bruno Adriano (2014)
- Bonn Workshop : 2014
- WCDRR : 2015
- Follow-up WCDRR Conference Bonn, 26-28 May 2015

2014 Workshop @Bonn

- Shunichi Koshimura, IRIDeS, Tohoku Univ.
- Fumio Yamazaki, Chiba Univ.
- Masashi Matsuoka, Tokyo Tech
- Liu Wen, Chiba Univ.
- Erick Mas, IRIDeS, Tohoku Univ.
- Hideomi Gokon, Tohoku Univ.
- Bruno Adriano, Tohoku Univ.
- Satomi Hayashi, Tohoku Univ.

Towards WCDRR Sendai

- Title of Public Forum (Side event) :
Enhancing Disaster Resilience by Fusion
of Simulation, Sensing and Geo-
informatics
- Organizing Committee : IRIDeS, DLR, UN-
SPIDER, JAXA, Ministry of Internal Affairs
and Communications (Financial Support)

Towards WCDRR Sendai

- Fusion of state-of-the-art disaster simulation, earth observation, variety of sensor networks and geo-informatics is a significant global opportunity for enhancing disaster preparedness and response and management, i.e. “disaster resilience”.
- Usefulness of big data acquired by variety of sensor networks, e.g. real-time geodetic data, seismic and tsunami monitoring data, remote sensing data, social big data, have been demonstrated in the 2011 Tohoku earthquake and tsunami disaster.
- Social issue we are focusing on is to enhance society’s resilience towards future catastrophic disaster and national crisis by providing the possible and severe disaster scenarios and leading actions of citizens to minimize losses. To solve this issue, the public forum we propose aims to provide an opportunity to share the advances of disaster management system and to discuss its utilization and future perspectives.