Wide Area Monitoring for Land Disaster Detection

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Landslide Prevention Zones

◇ There are over 12,00 landslide prevention zones in Shioku, Japan.

◇ Every zone is designated by government when landslide occurrence was found.

Tokyo

Test Area

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◇ Current landslide monitoring is in operation on the prevention zones.

◇ Disasters are sometime occurred out side of the prevention zones.

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Wide Area Monitoring

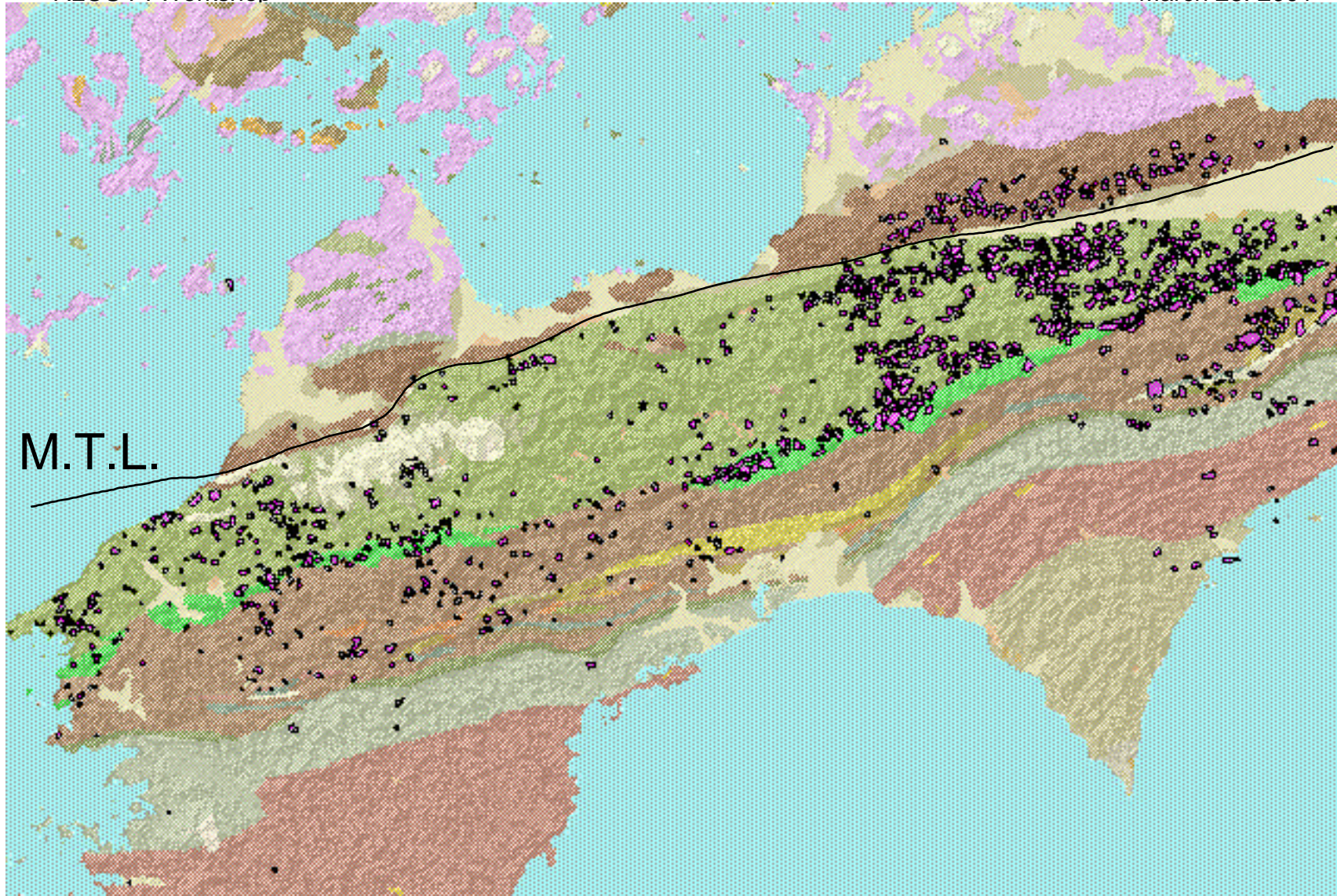Masataka TAKAGI, Kochi Univ. of Tech.
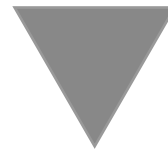
Mechanism of Landslide

Not Cleared

◆ Factors

◇ Topography, Geology, Meteorology, Soil Mechanics, etc.

◆ Movements

◇ Very Slow and Complecated

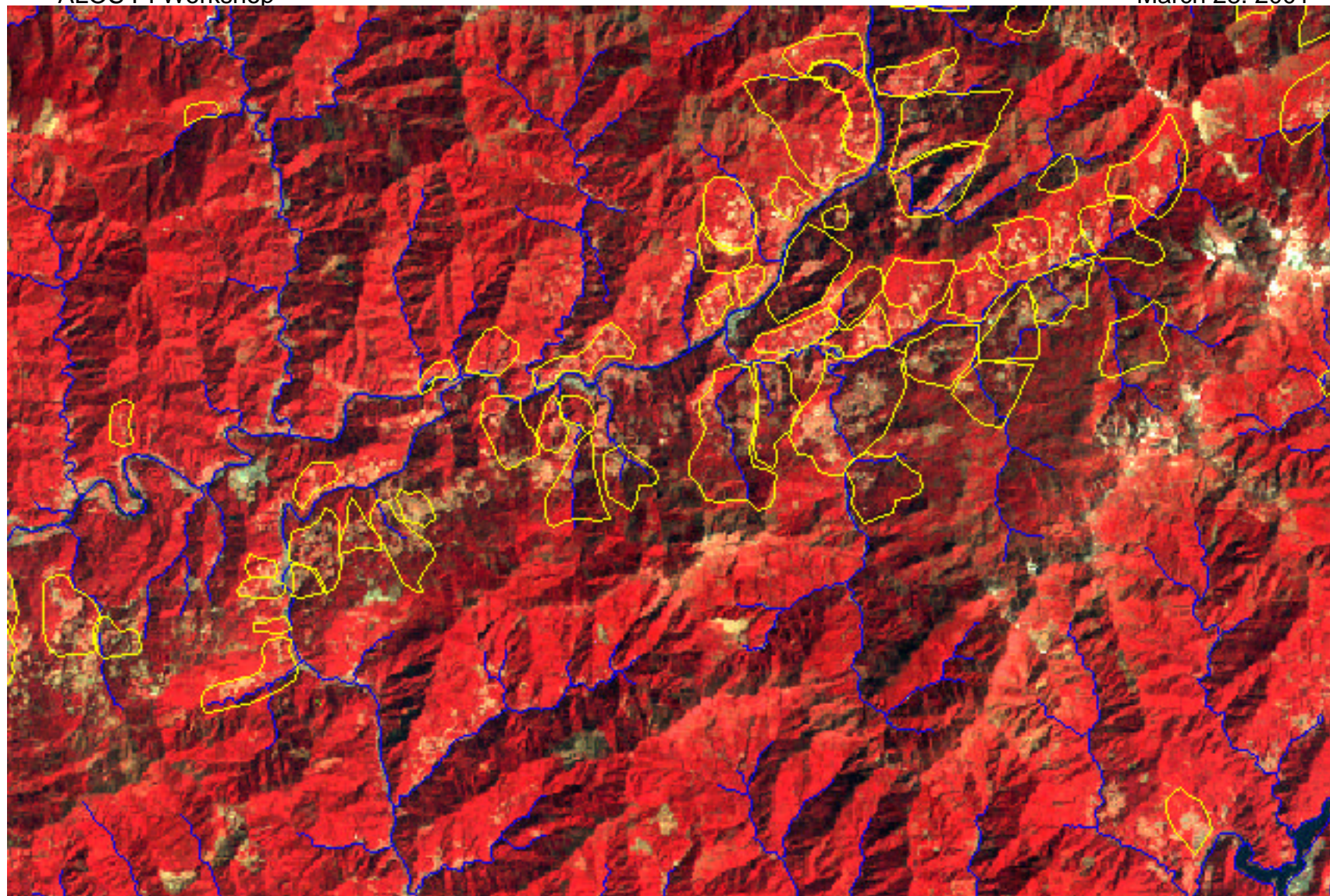Masataka TAKAGI, Kochi Univ. of Tech.

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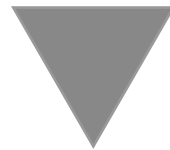
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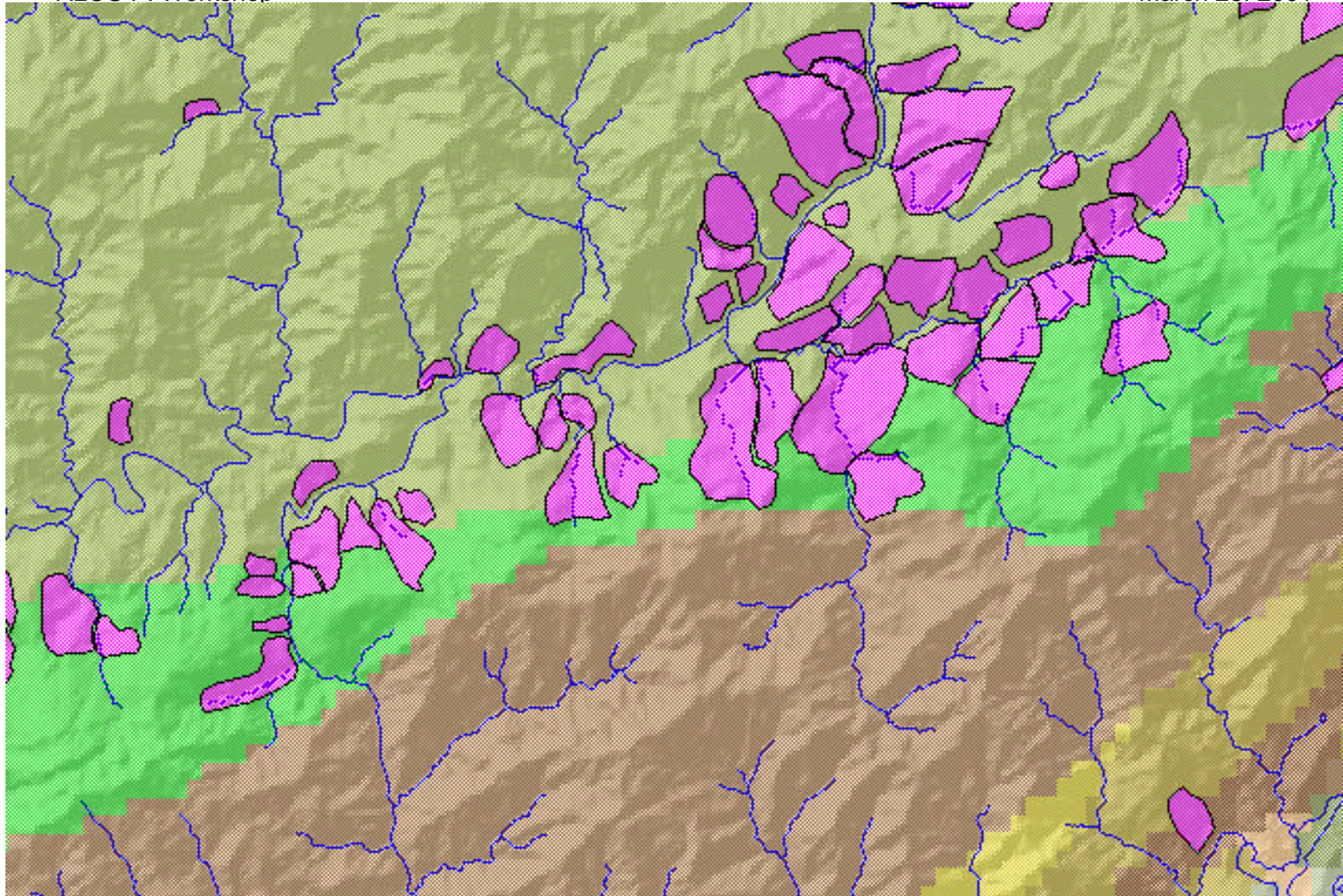
Advantages of ALOS Data for Disaster Monitoring

◆ **Combination of Optical Sensor and SAR**
  ◇ Optical: PRISM, AVNIR 2
  ◇ SAR: PALSAR

◆ **High Spatial Resolution**
  ◇ PRISM: 2.5m
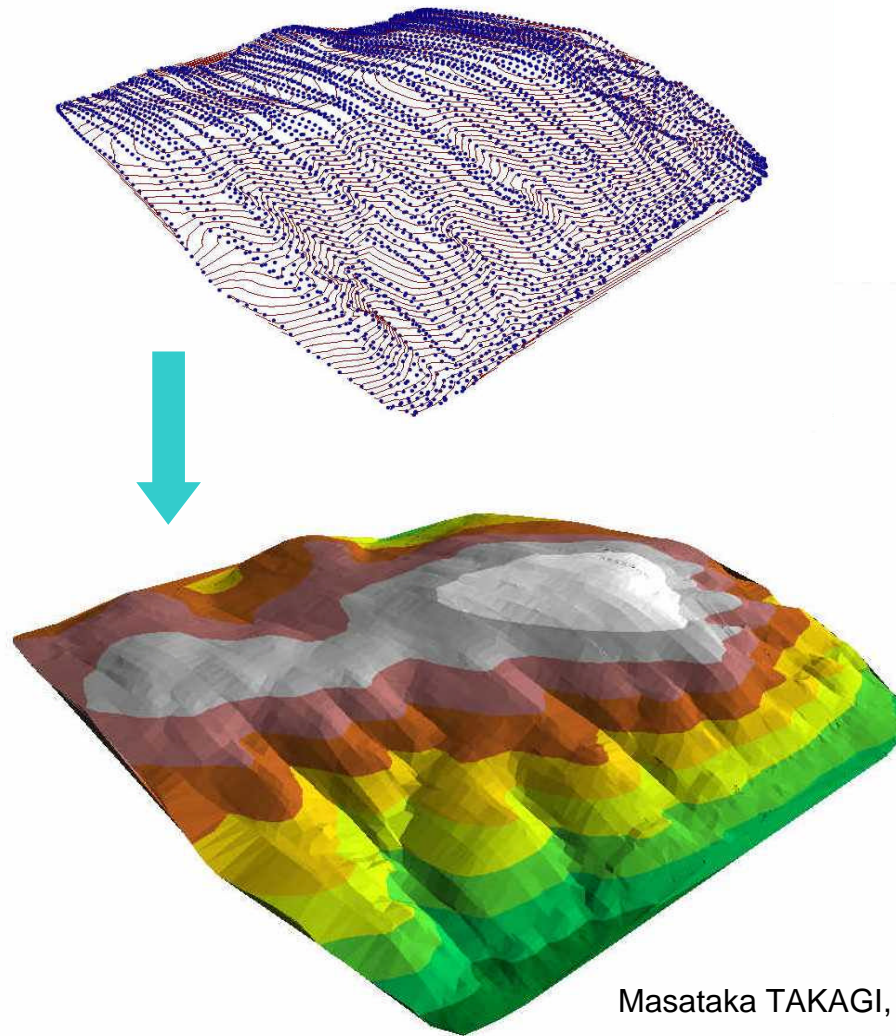 ◇ PALSAR: 10m

Detection of Landslide Movement

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Objectives

◆ Detection of Landslide Movement
  ◇ from stereo matching of PRISM
  ◇ from interferometry of PALSAR

◇ Wide Area Monitoring for Disaster Mitigation

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3D Measurement by GPS

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3D Measurement by
Digital Photogrammetry

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Required Data

test area (40,000km^2) every half year

- ◆ PRISM
  - ◇ Level 1B1
  - ◇ Cloud Free
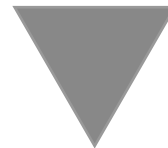 - ◇ Stereo pair imagery
- ◆ AVNIR2
  - ◇ Level 0
  - ◇ Cloud Free
- ◆ PALSAR
  - ◇ Level 0
  - ◇ Pair imagery for inteferometry

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Expected Results

◇ High Accurate GCPs Dataset

◆ Validation Results of Generated DEM
  ◇ from stereo matching of PRISM
  ◇ from interferometry of PALSAR

◇ Tracking Movement of Landslide

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to Build Landslide Monitoring System

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