Implementation Structure

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Exploration of underground faults by seismic wave big data using signal processing and machine learning

AIST
GSJ
IEVG
AIRC

東京都市大学 TOKYO CITY UNIVERSITY
東京工業大学 Tokyo Institute of Technology
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Ground Surface
Surface Trace
Estimated Underground Fault
East
Depth of 15 km
Subsurface View from South

Objective and Comprehensive Automatic Detection of Underground Faults

Seismic Data

Part 1 Intelligent Processing of Seismogram

- Anomaly Detection
- Denoise
- Earthquake Detection, Phase Picking

Database

Computer Codes

Part 4 Development of Basis of Earthquake Studies using Information Science

P & S Waves

Later Phases

Part 2 Determination of Fault Planes based on Hypocenter Distribution and Focal Mechanism Solutions

Part 3 Determination of Fault Geometry based on Seismic Later Phases

Discovery & Identification of Underground Faults

New Research Field Using Later Phases

Seismometer
Later Phase (Reflected Wave)
Direct Wave
Hypocenter
Underground Faults, etc.

Estimation of Underground Structure based on Later Phases (Reflected Waves, Guided Waves, etc.)