

# Geophysical research for mitigation of geological hazards caused by earthquakes

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## [Outline]

We have begun studies on geophysical exploration techniques to help in mitigation and reduction of geological hazards caused by great earthquakes.

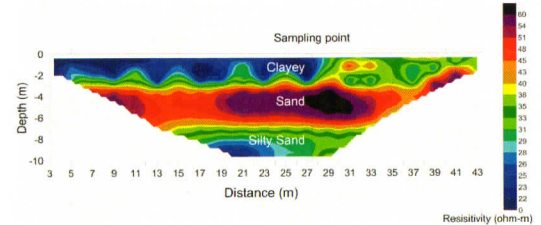
## [Details]

Three topics will be studied:

- Cone penetration tests and surface geophysical measurements will be conducted over soil liquefaction sites along the Tone River to investigate shallow underground structures and physical properties related to liquefaction risk.
- Airborne electromagnetic and surface electrical surveys will be carried out over tsunami-affected lands in Miyagi and Fukushima Prefectures to map zones of salt-water invasion, particularly in agricultural areas.
- Electromagnetic exploration methods will be used to delineate resistivity structures around the active faults that caused numerous aftershocks in Fukushima Prefecture.

## [Application of research results]

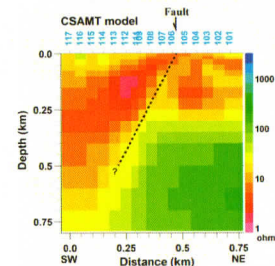
Restoration from earthquake hazards and risk mitigation in the future.



Electrical resistivity section at a river-levee site. Depth and thickness of sand layers are important factors in liquefaction risk.



DC resistivity survey at a tsunami-affected area in Fukushima Prefecture.



Resistivity cross section obtained at the Yunodake fault, showing a normal fault with downdropping of the southwestern block.