

Enhancement of Earthquake and Tsunami Disaster Mitigation Technology in Peru

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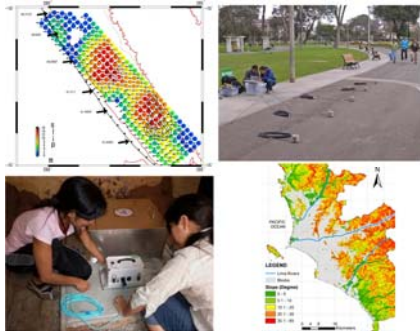
<http://ares.tu.chiba-u.jp/peru/index.html>

Scope of Project : This project studies the earthquake and tsunami disaster mitigation strategy in Peru with the strong collaboration between Japanese and Peruvian research groups. The project will be performed considering the regional characteristics of earthquake and tsunami, geological settings, soil profiles, and structural performance to provide the hazard maps in Peru. The development of earthquake and tsunami disaster mitigation technologies is the objective of this project with the application of Peruvian societies by performing the structural tests, creating the geo-spatial database, and planning the disaster mitigation strategies.

Study Group

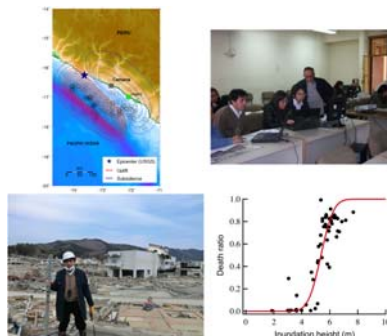
■ Seismic Motion and Geotechnical (G1)

This group studies the characteristics of earthquakes on the subduction zone at the Peruvian offshore. Microzonation will be performed to reflect the Peruvian geological characteristics with the study of soil profiles. Hazard map is created against the scenario earthquake with the consideration of local site conditions.



■ Tsunami (G2)

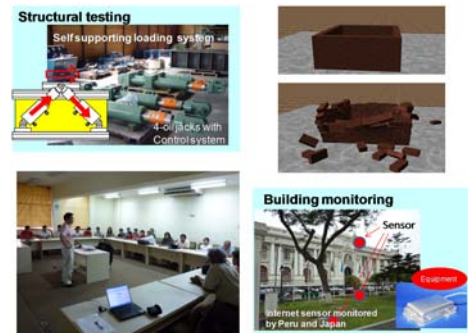
Numerical simulation of tsunami is studied using the historical earthquake records, and will be applied to the scenario earthquake to understand the vulnerability of Peruvian cities. Expected tsunami damages are provided which will be utilized as a baseline of damage mitigation strategy in creating the hazard map, land use planning, and evacuation guideline for Peruvian people.



■ Buildings (G3)

This group studies the vulnerability of buildings in Peru based on the historical records and provide the disaster mitigation strategy. Seismic retrofit methods for structures

are studied with the structural tests and numerical simulations considering the local variation of structural characteristics such as reinforced-concrete, masonry, and adobe structures. Vulnerability assessment procedures and seismic retrofits are also developed including the historical architectures and world heritages.



■ Damage Assessment (G4)

This group creates the buildings inventory and geo-spatial database with the use of remote sensing technologies, which will be used to calculate the baseline of earthquake and tsunami risk map. Damage evaluation procedures are also studied by using the remote sensing technologies against the actual historical earthquake to reflect the regional characteristics in Peruvian cities, and applied to the damage estimations against scenario earthquakes.



■ Disaster Mitigation Plan (G5)

This group studies the regional disaster mitigation plans together with the public organization in Peru such as INDECI against the earthquake and tsunami disasters. This group also performs the educational activities by organizing the public seminar, and visiting the local communities with earthquake and tsunami professionals.

