

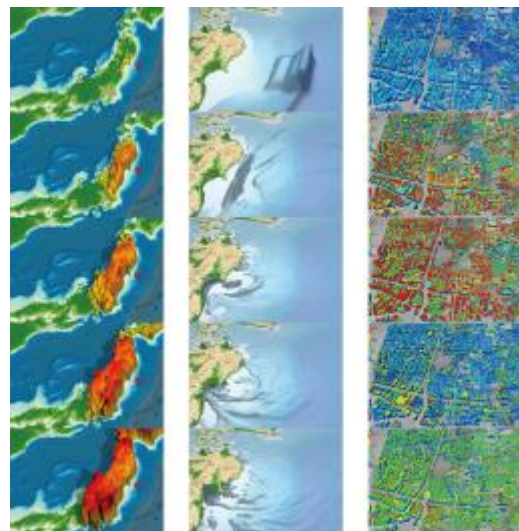


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**a. Outline:** Since its foundation in 1925, the mission of Earthquake Research Institute has been to promote research on earthquakes and volcanic eruptions, and to develop methods for mitigating relevant disasters. This mission requires a comprehensive understanding of the dynamics of the Earth's interior which drives these phenomena. To achieve this goal, we have been promoting multi-disciplinary research in solid earth sciences, integrating field observations, laboratory experiments and theoretical studies. In order to develop a new movement in highly advanced solid earth sciences, we must make every endeavor to extend the frontiers of our research field through active interaction between researchers in and outside our country. In 2010, ERI was re-organized as a joint usage/research center of Japanese universities and strengthened the function as a core institute of the national research program for prediction of earthquakes and volcanic eruptions. Also, we continue to invite foreign visiting researchers to stimulate international research cooperation.

Our organization covers the following research areas: Theoretical and monitoring geosciences, Earthquake and volcanic disaster mitigation, Earth and planetary materials sciences, Research on the prediction of earthquakes and volcano eruptions, Global-scale deformation and structure of the earth and High energy geophysics.

**b. Recent Research Achievements :** A new center called “Research Center for Large-scale Earthquake, Tsunami and Disaster” (LsETD) has been established with the aim of strengthening the cooperation between the fields of science and engineering in disaster mitigation research, using tightly integrated numerical simulation as the bridge. LsETD consists of two divisions: a division to invent advanced numerical algorithms and develop an integrated system, enhanced with high performance computing, for seamlessly simulating earthquake, tsunami,



disaster and human responses; another division dedicated to obtain exclusive information for better mitigation of anticipating disasters, by combining the results of the large scale seamless simulations of the involved hazards, disasters and human responses. Further, LsETD plays the central role of development and maintenance of the integrated system and shares it with other research organizations, offloading the burden of development and maintenance of advanced numerical tools and allowing them to focus on state of the art simulations and scientific investigations.

c. **Research Challenges for the Future:** ERI has collected a vast amount of data from its observation networks, field observations of various phenomena with different time-scales, experiments, numerical simulations, etc. We aim to incorporate these data into the disaster prediction and mitigation processes by means of statistical methods including data assimilation.