

## Preface

The Geological Survey of Japan (GSJ), AIST has been conducting earthquake-related geological and geophysical surveys and researches mainly in response to the basic policies of the Headquarters for Earthquake Research Promotion of the Japanese government, which was established in 2019. The national policy places particular emphasis on the promotion of social application of research results ever before, and we will intend to enhance the contents of this report series as one of the efforts in this direction.

As part of the “Five-year acceleration measures for disaster prevention, disaster mitigation, and national resilience” (approved by the Cabinet in December 2020), AIST has launched a four-year project, “Development of High-Precision Digital Geological Information for Disaster Prevention and Mitigation,” this fiscal year. This project includes the acceleration of active fault studies and the upgrading of the “Active fault database of Japan” released by AIST as important issues, and specific researches and data development are currently underway. The results of this project will be documented in the next and subsequent issues of this report series.

This issue contains the following three research reports on active faults conducted up to 2021 FY: 1) A study on paleoearthquakes since the Late Pleistocene based on trench excavation survey at the east end of the Midorikawa fault zone in central Kyushu based on the results of trench excavation survey (a part of “Active fault research for regional evaluation, Kyushu region” commissioned by the Ministry of Education, Culture, Sports, Science and Technology (MEXT)), 2) A pilot study on deformation structure analysis of the Alluvium using a borehole camera system to elucidate the recurrence history of the active faults (a part of “Comprehensive research project for the Nara-bonchi-toen fault zone” commissioned by MEXT), and 3) A study on the conditions for the occurrence of multi-segment earthquake along the Itoigawa-Shizuoka Tectonic Line active fault zone using dynamic rupture simulations (a part of “Research project for long-term evaluation methods of active faults related to multi-segment earthquakes” commissioned by MEXT).

The reports were peer-reviewed by the editorial board consisting of the deputy directors and group leaders of the IEVG (Research Institute of Earthquake and Volcano Geology), to maintain a certain level of quality. We welcome frank opinions and comments from readers on the contents of this report and the way research results on active faults and earthquakes should be disclosed. At the end of this issue, we would like to express our gratitude to the relevant ministries, local governments, organizations, landowners, and companies for their understanding and cooperation in our research.

ITOH Jun'ichi

Director, Research Institute of Earthquake and Volcano Geology

FUJIWARA Osamu

Deputy Director, Research Institute of Earthquake and Volcano Geology

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