Preface

Active Fault Research Center (AFRC) was launched in April 2001 as one of the major research units of the new Geological Survey of Japan (GSJ), in association with the establishment of the National Institute of Advanced Industrial Science and Technology (AIST). AFRC is one of the responsible organizations for active fault studies in Japan under the Headquarters for Earthquake Research Promotion of the Japanese government (HQERP). AFRC will make efforts to provide innovative and reliable scientific results to help reduce losses from future earthquakes and tsunamis.

This report is the fourth annual publication of AFRC to present the research results on active faults and paleoearthquakes in the 2003 fiscal year. The geological studies are reported on six active faults, that is, the Kuromatsunai fault zone, the Nagamachi-Rifu line fault zone, the Fukaya fault (Kanto-heiya-seien fault zone), the Ohchigata fault zone, the Ushikubi fault and the Sakaitoge fault, among the 98 major active faults selected by HQERP for prompt survey. A study on geological structures of a lineament near the 2000 Tottori-ken Seibu earthquake (M_J7.3) area and geological studies of the Oharako fault zone are also included in this report.

The 1944 surface ruptures and slip distribution along the North Anatolian fault system in Turkey is reported as a result of international cooperation with the General Directorate of Mineral Research and Explanation of Turkey, and a study of surface deformation and related damage during the 2001 Central Kunlun earthquake (M_W7.8) also appears in this publication as a result of international cooperation with Chinese geological institutions. In addition, collaborative studies with U.S. Geological Survey and University of Valparaiso on paleoearthquakes and paleotsunamis off the Pacific coast of Chile are also reported.

Four papers are on the tsunami deposits on the Pacific coast of eastern Hokkaido in different environments and tsunami simulation studies to reproduce the distribution, as a part of geological studies of subduction-zone earthquakes. Three papers report the earthquake hazard assessment studies in the Osaka Plain; a structural model of Osaka Bay fault zone, dynamic rupture simulations on the Rokko-Awaji fault system to reproduce the 1995 Kobe earthquake, and effects of shallow sediments on seismic ground motion.

We would like to express our sincere gratitude to land owners, local communities and municipalities that allowed us to work in private properties. We hope that this report will help promote hazard evaluation of fault activity, ground shaking and tsunami, and that our new findings become valuable information to public authorities and general public.

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