

Preface

A gigantic earthquake of magnitude (M) of 9.0 on March 11, namely the 2011 off the Pacific coast of Tohoku Earthquake, is the largest one recorded in Japan. The number of missing and dead is about 20,000, and many people are still scraping up a living. It is undeniable that such huge damages result partially due to imperfections of earthquake research. It is, however, necessary to utilize the imperfect research results to improve disaster countermeasures. In that case, we have to be well aware of the imperfections of the science. For example for many seismologists, the size of the Tohoku earthquake of M9.0 was unexpectedly huge for the Tohoku area even though studies of the Jogan earthquake in A.D. 869 have shown that a massive earthquake larger than M8.4 could occur in the Tohoku area. The huge disaster by the present earthquake took place before the research achievements of the Jogan earthquake could be reflected in disaster countermeasures. This shows that a relatively long time is necessary to utilize research results in political measures of national and/or local governments. We, thus, feel keen responsibility quickly to convey outcomes of researches by using this kind of the “Annual Report”.

The present volume contains 20 reports based mainly on activities of the AFERC in 2010 and on urgent researches following the present Tohoku earthquake. Among them, the following studies are supported by external funds contracted by MEXT (the Ministry of Education, Culture, Sports, Science and Technology-Japan) for paleoearthquake and related studies on 7 fault zones: the Rumoi offing active fold (northern Japan), the Kuromatsunai-Teichi Fault Zone (northern Japan), the Warikurayama fault (northeast Japan), the Yanagase-Yoro fault system (central Japan), the eastern margin fault zone of the Fukui plain (central Japan), the Itsukaichi fault zone (southwest Japan) and the Futagawa-Hinagu Fault Zone (southwest Japan). A geomorphological survey on the Tanna fault (central Japan) is supported by JNES (Japan Nuclear Energy Safety Organization). Other surveys and researches, that is, an urgent survey of tsunami deposits of the present Tohoku earthquake, reconsiderations of the 17th century Kuril earthquake and the 1703 Kanto earthquake, surveys on the Iwakuni fault zone (southwest Japan) and on the Sakata offing active fold, studies on stress states of the Atera fault (central Japan), and on stress accumulation process in entire Japan islands were supported by internal funds of AIST.

We welcome comments from readers on the contents of this report, and the ways to publicize the results of our surveys and researches. Finally, we would like to express our sincere gratitude to land owners, local communities and municipality that allowed us to work on private properties.

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December 5, 2011