Preface

This special issue consists of contributions related to the International Symposium on Slow Slip Events at Plate Subduction Zones, at Nagoya University, Japan, during March 16–18, 2004.

"Slow slip" is a newly found phenomenon of the late 1990's. Precise monitoring of crustal movements with continuous Global Positioning System (GPS) sites has enabled us to detect the subtle surface deformations caused by this phenomenon. Episodic reversals to the secular crustal movements with duration from days to years have been found along plate subduction zones in Japan, Cascadia, New Zealand, Mexico, and Alaska. Those events are interpreted as silent rebounding fault slips taking place on the plate boundary. The discovery of slow slip events, together with that of non-volcanic low frequency tremors, has given us a new insight into the physical processes at plate subduction zones.

The international symposium at Nagoya University provided a unique timely opportunity to present various results of observations, data analysis, modeling and many other topics related to slow slip events. About 85 participants, including 18 scientists from overseas, took part in the symposium, resulting in many wide-ranging, intriguing presentations and stimulating discussions.

In this special issue, *Ozawa et al*. discuss the current status of the Tokai slow slip event, which has been continuing from 2001, immediately adjacent to the hypothesized source region of the Tokai earthquake. Also with reference to the Tokai slow slip event, *Yamamoto et al*. report on an investigation of 20 years of tiltmeter data in an effort to find similar events in the past. *Seno* and *Takahashi and Seno* propose a unified interpretation for the Tokai slow slip event and the Miyake-Kohzu seismo-volcanic activity in 2000 by assuming a subhorizontal detachment fault beneath the Izu peninsula. *Kodaira et al*. discuss the seismological structure of the Tokai area and point out characteristic features related to the slow slip events. *Hirose and Obara* discuss short-term slow slip events synchronized with low frequency tremor activity in southwest Japan using borehole tiltmeter data. From overseas, *Franco et al*. conducted a detailed investigation about the duration and the extent of the 2001 slow slip event in the Oaxaca region, southeastern Mexico. *Besana et al*. introduce an interesting faulting phenomenon around the central Philippine Fault.

Since the history of studies on slow slip events is still too short, the physical mechanism of such events is not well understood. It is of fundamental importance to have as many examples as possible in order to extract common characteristics from different events and to classify those events into appropriate categories. It is our hope that this special issue will become a milestone towards reaching such a comprehensive understanding of slow slip events.

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