

## Stress distribution in central Japan estimated from active faults and comparison of it to results from a model simulation

Yusuke Ota[1]; # Toshinori Sato[2]; Chihiro Hashimoto[3]; Mitsuhiro Matsu'ura[4]

[1] Life and Earth Science, Chiba Univ; [2] Chiba Univ.; [3] Univ. of Tokyo; [4] Dept. of Earth & Planetary Science, Univ. of Tokyo

### Introduction

It is well known that active faults in the inland Japan have generated earthquakes every few thousand-few tens of thousand years during last 1 million years. This activity results from accumulation of tectonic stresses in the intraplate due to the relative plate motion. We have been developing a model which can simulate crustal activity in Japan. Hashimoto and Matsu'ura (2004) have simulated stress accumulation using a concept of partial collision at the plate boundary. Ishimura et al. (2005) estimated stress accumulation in north-east Japan from active faults and revealed that the estimated crustal shortening rates in the Tohoku area are about 3-6% of the plate convergence rate. This presentation shows strain rates and stress accumulation distribution in central Japan estimated from quaternary active fault data and comparison of them to results from the model simulation.

### Estimation of strains and stresses

The method of estimation of strains and stresses is the same as that in Ishimura et al. (2005). We use active fault distribution from 'Digital Map of Active Faults'. We also use the data of 'activity of fault' from 'Active Faults in Japan, 2nd ed.' if the data do not exist in 'Digital Map of Active Faults'. We estimate distribution of the stress accumulation from an assumption that the moment released by each fault distributes around the fault with the 2D normal distribution.

### Results

The estimated distribution of the stress accumulation shows radiation pattern for compression axes at Izu region. In central Japan, east-west compression is dominant. In the large strain accumulation belt from Niigata to Kobe, which revealed from GPS surveys, large accumulation rate is shown at Niigata, but is not shown around Biwa Lake from the data of active faults. We compare these results with the simulated stress fields. The stress fields with collision only at Izu region do not match with the observed fields. This means that there are some partial collisions at the Nankai Trough.