Tsunami Scenario in the Nankai Trough, Japan, Based on the GPS-A and GNSS Velocities
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1. Introduction

In this study, we refined their model, derived the slip deficit on the plate interface and included a tsunami propagation model. The major changes compared to Yokota et al. [2016] are as follows:

(1) Their slip deficit calculated on the Kii Peninsula, Japan, was adjusted to the 97% of slip deficit. As this work suggests, plate geometry is the primary factor in tsunami wave propagation.

(2) We added the information from the historical records into assumed slip distribution.

(3) We included inelastic properties in the slip deficit rate inversion.

<Geodetic data>

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2.2 Corrections on velocities by postseismic deformation of the 2004 southeastern off the Kii Peninsula earthquakes (Mw 7.1, 7.4)

In order to remove the postseismic effect of the 2004 off-Kii earthquakes (Fig. 3-4), we constructed the finite element model with bi-linear shape functions (Fig. 3-5). We limited the 3 x 4 sets of postseismic offsets of the plate interface model. The preferred model provides the consistent trend with the observations (Fig. 3-7). The misfit of tested models can be used for the tsunami initiation analysis of post-slip deficit.

4.2. Result 2 & 3 - Tsunami Wave Propagation -

Results are used to correct the crustal velocities including the mantle and the weak layer. We tested 3 x 4 x 6 sets of coseismic faults. We tested the same fault set as mentioned above.

5. Discussions and Conclusions

<Slip deficit rate distribution>

GPS-A data significantly improved the interseismic model along the Nankai trough.

<Plate geometry>

- The whole area of the Nankai trough was well represented by the CAMP geometry.

<Coastal topography>

- The bathymetry model was improved by the JMA bathymetry.

<Geodetic measurements>

- The JMA GPS-A data significantly improved the interseismic model along the Nankai trough.

<Slip deficit rate distribution>

Approximately 10% larger slip deficit rate was estimated.

<Bibliography>

Arisa and Heki, 2016

Kumano Basin

Ise Bay

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