

## Distribution of asperities of the 1854 Ansei Nankai earthquake

# Yuichi Namegaya[1]; Yoshinobu Tsuji[1]

[1] ERI, Univ. Tokyo

Are the locations of the asperities of each gigantic earthquake belonging to the series of the Nankai earthquakes located commonly at the same places? In order to clarify this, the locations of asperities of two Nankai earthquakes, the 1854 Ansei Nankai earthquake and the 1946 Showa Nankai earthquake should be estimated and compared to each other. Distribution of asperities of the 1946 Showa Nankai earthquake is estimated by Tanioka and Satake (2001) by using inversion method on the tide gauge records of the tsunami wave. They pointed out that there are three asperities; the south off Susaki city, Kochi prefecture; the east off the cape Muroto; and sea area south off Kii peninsula. However, the distribution of asperities of the 1854 Ansei Nankai earthquake has not been estimated, because there are no data of the tide gauge records of the tsunami. Only the distributions of the tsunami maximum heights, the crustal deformations, and the seismic intensities estimated from the old documents are available for the 1854 Ansei Nankai earthquake. In this study, we developed the nonlinear inversion method to solve the distribution of asperities by using the data of the tsunami maximum heights and the crustal deformations. We estimated the distribution of asperities to make the sums of square of differences of the maximum tsunami heights between the recorded and calculated minimum. As the result, the distribution of asperities of the 1854 Ansei Nankai earthquake is similar to that of the 1946 Showa Nankai earthquake, but the amount of dislocations of the former is larger than that of the latter.