Revised recipe for predicting strong ground motion -Example of strong motion prediction from Nankai-trough earthquakes-

\# Kojiro Irikura[1], Hiroe Miyake[2]

[1] Disas. Prev. Res. Inst., Kyoto Univ., [2] DPRI, Kyoto Univ.

http://sms.dpri.kyoto-u.ac.jp

   The long-period and short-period characteristics of ground motions from a heterogeneous fault are expressed as the outer and inner source parameters following a multi-asperity model, which extend a single-asperity model by Das and Kostrov (1986). The stress drop on each asperity is determined as a function of total seismic moment, total rupture area, and combined area. The short-period source spectra are related to the product of the stress drop on asperity and the square-root of the combined asperity area. Slip on asperity is also related with the same product. Those constraint conditions can construct the source model for estimating strong ground motion from future earthquakes. We propose a revised recipe of strong motion prediction based on the above formulations. We describe the procedure for constructing the source models of the Nankai-trough earthquakes.