

# A Study on modeling the structure of the Osaka Basin for strong ground motion prediction

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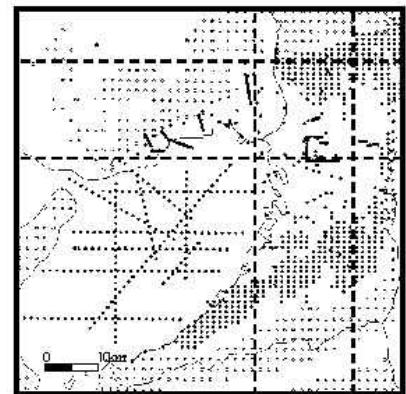
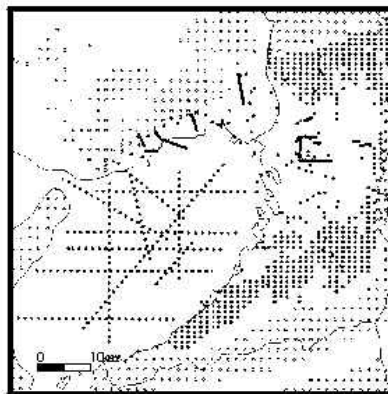
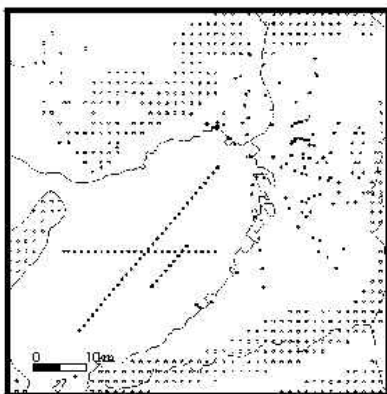
A smooth basin structure model with four sedimentary layers is proposed for the subsurface structure of Osaka Basin, Japan. In the region, a lot of field explorations have been conducted before and after the 1995 Hyogoken-Nanbu (Kobe) Earthquake. Especially, after the earthquake, our knowledge about the structure has greatly increased.

We have collected the published data of such explorations and we also did several investigations by ourselves. We have used several set of two-dimensional third-order B Spline functions to make smooth structure model from given data set. Advantage of using the Spline function is that we can make models with proper accuracy according to density of given exploration points. We created several versions of models with different densities of data according to modeling history.

Microtremor array observations were used to model the physical parameters of sedimentary structure. The proposed four layers model well explains dispersion characteristics of Rayleigh wave that derived from microtremor array measurement conducted in the Osaka Basin. The procedure in this presentation will be applicable for other sedimentary basin structures. We hope that the models generated by the procedure can be well used not only for simulations of long period seismic wave propagation, but also strong ground motion prediction with wide frequency band in case adding shallow sedimentary structures on the Spline model. We will demonstrate simulation results using the structure model.

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## 情報の多寡に応じたモデルの高度化



兵庫県南部地震以前のデータ 兵庫県南部地震以後のデータを追加 不規則格子による高精度化

