Seismic *p–y* Model of Pile Foundation Taking into Account Soil Non-linearity

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It is well known that a behavior of a pile supported structure is strongly affected by non-linear dynamic soil-structure interaction (SSI) during a severe earthquake. There are two major factors which affect the nonlinear SSI, the one is the local nonlinearity and the other is the site nonlinearity. A detailed *p–y* model of a pile foundation has been developed in this paper by taking into account both of these two effects. In the current seismic design procedure, however, a very simple *p–y* curve is conventionally used. The applicability of this conventional *p–y* model is confirmed by comparing the simulated result obtained by the newly developed detailed model with that by the conventional model.