

## RESPONSE ANALYSIS METHOD FOR KYO-MACHIYA

YAMADA, Koji\*, SUZUKI, Yoshiyuki, OGASAWARA, Masatoshi, SUDA, Tatsuru and SHIMIZU, Hidemaru

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### SUMMARY

In this paper, we discuss the response analysis method for Kyo-machiya (Japanese traditional wooden framed house in Kyoto). Kyo-machiya is a typical traditional town house in Japan, and it is a composite both a store and a dwelling. A Kyo-machiya is composed of wooden frames and mud plaster wall with a short span in ridge direction. Two houses are tested on the shaking table. The one is a dismantled and re-constructed traditional Japanese house. The other is a newly designed traditional Japanese house. The inputted earthquake motions are BCJ-L2 distributed by the Building Center of Japan and JMA-Kobe of Great Hanshin earthquake. The result of the shaking table test is compared with the result of numerical analyses with pancake models. The numerical analysis pancake model has soft floor elements with shear deformation, mud plaster wall models, columns with a wall upper than picture rail, and ladder framed reinforce member. The results are as follows: the excellent response analysis needs a real data just under the house. The response analysis of a newly designed traditional Japanese house is quite adequate to the result of a shaking table test. The stiffness of floor is identified as 10% stiffness of the plywood floor. The response analysis of a dismantled and re-constructed traditional Japanese house is inadequate to the result of a shaking table test because of the stiffness of clay wall.



Fig.1 dismantled and re-constructed traditional Japanese house



Fig.2 newly designed traditional Japanese house