Seismic Response Analysis by the Subloading Surface Model

Kenichiro Miyashita[*], Koichi Hashiguchi[†] and Shigeru Sato[*]

[*] Pacific Consultants Corporation (PCKK)
7-5,Sekido 1-chome, Tama-shi,Tokyo,Japan
Email: kenichirou.miyashita@os.pacific.co.jp - Web page: http://www.pacific.co.jp

[†] Dept. Dependent and Optimum Design, Joining and Welding Research Institute
Mihogaoka 11-1, Ibaragi-shi, Osaka 567-0047, Japan
Email: khashi@kyudai.jp

ABSTRACT

A lot of disaster by liquefaction have been reported in area along the shore of Japan. In particular, the liquefaction has occurred in the wide area in the Great East Japan Earthquake of 2011. Various approaches for the liquefaction analysis have been proposed up to present. Among these approaches, the subloading surface model is formulated in the framework of the cyclic plasticity model and thus it is expected to provide a highly pertinent simulation of cyclic loading behaviour of materials. Further, the explicit constitutive equation of soils has been formulated to describe the cyclic loading behaviour with the cyclic mobility [1]. In this study, the validity of the liquefaction analysis by the subloading surface model is examined by comparing the simulation by the subloading surface model with the actual record for the acceleration wave in the ground surface to the input of the actual data of the acceleration wave in the soil ground base. The actual data used in the simulation was recorded in the Kushiro earthquake in 1993. [2]

REFERENCES

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