SSS35-09   Room:303   Time:May 22 11:30-11:45

Application of GPR and discontinuity analysis of bed distribution to a survey for hidden fault, Sannomiya, Kobe

MIYATA, Takao[1]*, Mayu Nojirino[2]

[1]Graduate School of Science, Kobe University, [2]Faculty of Science, Kobe University

There are many active faults in the northern Osaka Bay and the Rokko Mountains. However, the hidden fault in the urban area of Kobe between the two is not yet known. Hitherto, we analyzed the bed-distribution discontinuity for the marine beds, Ma 12 (~135 kyr.) and Ma13 (~9 kyr.), using the database, Kobe JIBANKUN (Kobe City), in order to grasp a hidden fault in the southwestern part of Sannomiya, Kobe. In addition, we carried out the ground-penetrating radar (GPR) investigation along seven survey lines in the area, showing the vertical drop of the Ma12 bed and/or Ma13 bed on a profile of boring logs.

On GPR sections, the pattern of reflector signals changes from a horizontal line to a southward decline, like a flexure. This place is supported with the vertical drop obtained from a discontinuity analysis of the distribution of the Ma12 and Ma13 beds. These anomalous parts distribute along two lines; one corresponds to a NNE-directional hidden fault, and the other can be interpreted as a north-directional hidden fault. Therefore a combined use of the GPR and discontinuity analysis of bed distribution is very useful for grasping a hidden fault in an urban area.

Keywords: Combined use of GPR and discontinuity analysis of bed, hidden fault, flexure-like structures, marine clay beds, Sannomiya (Kobe)