

## A Study on the Seismicity and the Crustal Structure in the Central Part of the South Korea

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We constructed five digital seismic stations around the central part of the south Korea, and have monitored seismicity

since 1997. Twenty three quakes were recorded from December 1997 to October 1998. The highest magnitudes of the earthquakes are 3.6 which occurred at the

south corner of the network on September 30. Epicenters show the alignment along the lineation of NE-SW. In this study, we will analyzed the travel time data to find the crustal model for the central part of the south Korea.

The south Korea, which lies within the Eurasian plate, has been regarded as a seismically stable land of cratonic nature. However, the most damaging earthquake in this country occurred at the Hongsung, the central part of the south Korea, on 1978. After this quake, the national organization started to establish seismograph stations and 13 ones were operating now. However, the network is too sparse to cover the seismicity of the whole nation including coastal area. We thus constructed five digital seismic stations around the central part of the south Korea, and have monitored seismicity since 1997. Four stations were set up at the corners of an approximately 50

km by 80 km rectangular region. The epicenter and magnitude of the earthquakes were estimated using conventional program, HYPO71 (Lee and Lahr, 1975) with the velocity model proposed by Kim & Kim(1983). The hypocentral locations requires more than three station's record of seismicity, which means the magnitude of the earthquake is higher than 2.0 in this area. Twenty three quakes were recorded from December 1997 to October 1998. The highest magnitudes of the earthquakes are 3.6 which occurred at the south corner of the network on September 30. Epicenters show the alignment along the lineation of NE-SW. However, these epicentral locations may be different if we use another velocity structure as an input model of HYPO71. Three models were known as a crust of Korea; model with one (Lee, 1979), two (Kim & Kim, 1983) and three layers (Kim & Jung, 1985). Recently Kim(1995) supported model with three layers but another studies (Chung, 1995; Lee & Chung, 1999) suggested that there is no surface layer based upon the model with three layers. In this study, we will analyzed the travel time data to find the crustal model for the central part of the south Korea.