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Crustal structure of Korean Peninsula from Magnetotelluric and Gravity data

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We have performed magnetotelluric(MT) surveys to investigate the deep crustal structure of the Korean Peninsula. The MT data were collected in the frequency range from 0.00042 to 320Hz along a profile across the eastern part of South Korea (Figure.1), and 2-D inversion was carried out to interpret the geoelectrical structure by using Occam, REBOCC(reduced data space Occam approaches), NLCG(nonlinear conjugate gradient) algorithms. We also extracted gravity data along the MT profile from KIGAM database and calculated the density inversion to compare with the geoelectrical structure. Finally, we have carried out the simultaneous inversion of MT and gravity data to improve the reliability of the deep structural model of the Peninsula in terms of geophysical properties. If we complete the MT surveys across the whole Peninsula, this study would provide invaluable basic information to geologists for their further studies about the detailed deep geological structure of the various parts in the Korean peninsula.

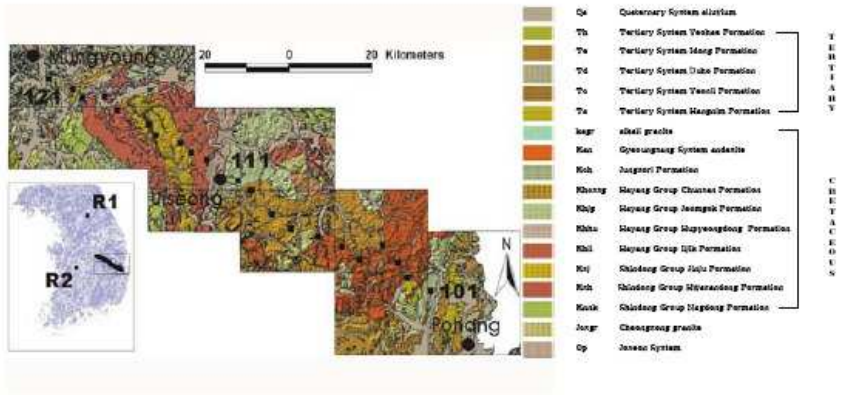

Figure 1. Geological map of survey area.