Mantle-crust structure beneath the San-In area affected by late Cenozoic tectonics and magmatism

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On the Japan Sea shore-coast area in the San-In area has been recognized as seismically active area with frequent mid-scale earthquakes, different focal mechanism from surrounding areas, and existing low resistivity zone in the lower crust. The crust-mantle structure of this area has been subjected by (1) extension tectonics with rift zone formation associated with basalt magma underplating and plutonic intrusion into the crust related with the Japan Sea basin opening at around 15 Ma and (2) intrusion of dacite magma induced by melting of the Philippine Sea Plate slab perhaps associated with slab derived fluid addition to the lower crust after 1.7 Ma. These two tectono-magmatic events combined to form the present crust-mantle structure beneath the area. This development history should be taken into account in investigations of the causes of seismicity of the area.