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Tectonic evolution of fault system in the southeastern Korea

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In the southeastern Korea, six faults run sub-parallel to the NNE direction, which called as the Yangsan Fault System. These faults are developed in the Cretaceous sedimentary and volcanic rocks, and affected the Cretaceous and early Tertiary granitic rocks. The Yangsan Fault Zone (YFZ) has the cataclastic zones with sub-horizontal striation and dextral movement sense. Around Gyeongju city, the YFZ joins with the Ulsan Fault Zone (UFZ), which is more than 125 km long and 10 km wide, and changes its strike from NNW-SSE in the southern part to N-S in the north. The UFZ is a master fault of including several NNE-trending strike-slip fault zones in the southeastern Korea. The transtensional basins are developed within UFZ by dextral shearing during Tertiary, which are composed of NW-SE and NE-SW segments. NW-SE segments of the UFZ show a right-stepped en echelon pattern as a dextral transfer fault, and NE-SW ones restricted within former segments makes a relayed extensional zone. Extensional and right lateral strike-slip movement around UFZ and YFZ occurred during 43-15 Ma probably. The eastern margin of the UFZ has been mainly affected by transpression as an inversion tectonics after 15 Ma, but in the western margin little affected. Several NS-trending Quaternary faults dip to E with an angle of 30 to 80, indicating the top-to-the-west sense of movement and the sinistral strike-slip faulting.