

CRETACEOUS VALLES-TYPE VOLCANO-TECTONIC DEPRESSION IN THE KYONGSANG BASIN, KOREA

YUN, S. H. and YANG, K., Department of Earth Sciences, Pusan National University, Pusan, Korea

During the Cretaceous to early Tertiary, the Kyongsang basin of southeastern Korea was part of an Andean-type continental margin along eastern Asia. The igneous activities occurred from the calc-alkaline magma formed by partial melting of subducted oceanic crust at a compressional plate margin. Especially, the great volumes of intermediate to silicic volcanic rocks were erupted mainly as ash-flow and/or fallout tuffs. The presence of PVD(Pusan-Taegu Volcano-tectonic Depression) zone, covering an area of nearly 95x75 km in diameters, is delineated by a ellipsoidal topographic feature which consist of concentric volcanic and granitic ring complexes and the basement sedimentary rocks dipping toward the central part. These structures indicate the subvolcanic features analogues of the resurgent cauldrons. Cauldrons form characteristic landscape features making up various mountains. Volcanic rocks show a dome structure in the central part of the cauldrons. The cauldrons commonly show a negative Bouguer anomaly, -5 to -10 mgal. Within the inferred PVD zone, the largest inner cauldron (25x35 km in diameters) is developed. The other eight cauldrons are developed at peripheral parts of the PVD and contain granitic rocks which intruded along the ring fracture zone. These informations including distribution patterns, shapes and structures of the volcanic rocks, together with rock compositions, suggest that the PVD belong to the Valles-type.