

OBDUCTED OPHIOLITES IN THE GRANULITE TERRANE OF SOUTH INDIA

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South Indian granulite terrain is traversed by prominent shear zones. A 20 km wide E-W trending Noyil-Cauvery (NC) shear zone is considered to be a suture as the blocks on either side have different tectono-metamorphic characteristics. In this shear zone a small ultramafic-mafic-felsic suite, comprising dunites, pyroxenites, gabbros, amphibolites, anorthosites and plagiogranites is exposed. The pyroxenites, gabbros and anorthosites form N-S trending linear ridges while dunites, amphibolites and plagiogranites occur in between. Marbles and calc-silicate rocks occur closeby in the north while magnetite bearing iron formation associated with amphibolites, pyroxenites and anorthosites occur further north. An important feature of the suite is presence of plagiogranite (plagioclase (An=17.5%) and quartz) with its typical granophyric texture. The chemical composition and REE of dunites, pyroxenites and amphibolites is similar to the primitive basic magmas. The whole suite exhibits differentiation. Our studies have indicated this suite to be a product of differentiation of a low-K oceanic tholeiite parent magma. The lithology, its association with pelagic sediments, textural mineralogical, chemical signatures and the tectonic setting of the region indicate this suite to be an obducted ophiolite suite along the N-C lineament which has been considered to be a suture.