SHEATH FOLDS FOUND AT THE NORTHEASTERN PART OF VISAKHAPATNAM EASTERN GHATS MOBILE BELT, INDIA

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The Eastern Ghats Mobile Belt (EGMB) runs in northeast-southwest direction along the eastern coast line of Peninsula India with about 1000 km in length and 100~300 km in width. It consists of metamorphosed supracrustals of granulite-facies rocks, granites, charnockites-enderbites, anorthosites and alkaline rocks with minor amount of marble and quartzite. The Visakhapatnam area is situated in the middle part of the northern EGMB. In this area, mainly high-grade garnet-sillimanite (-biotite) gneiss (khondalite) and garnet quartz-feldspathic gneiss (leptynite) are exposed. An interesting occurrence of a cluster of mesoscopic sheath folds were found at Ramadri coast, 12km northeast from Visakhapatnam, in highly disturbed khondalite which shows the effect of intense shearing and folding. This is the first description of sheath folds in the Visakhapatnam area, although the existence of sheath folds have been reported from several localities in the EGMB. Investigation on the mechanism of sheath folding at this location indicates the formation of a-tectonite under very intense stress condition. The process of formation of these mesoscopic sheath folds are considered to be due to very intense shear deformation on a regional scale folding structure that was formed at the location of so called “Maduravada Dome” with 5x10 km extent, situated 4 km to the west of Ramadri coast as a mega sheath fold. Moreover, due to this deformation, intense shearing occurred in the eastern side of this sheath structure with the same direction as of the mega sheath fold, which caused a cluster of mesoscopic sheath folds at Ramadri coast.