

## **MULTI STAGE DEFORMATION IN THE NALLAMALAI FOLD BELT (NFB), CUDDAPAH BASIN, SOUTH INDIA — EVIDENCE FOR PRE-GRENVILLIAN TECTONISM ALONG SOUTHEASTERN MARGIN OF INDIA**

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The Papaghni and Chitravati Groups in the western part of the Cuddapah basin with records of protracted sedimentation history (c.1800-700 Ma), are without any penetrative deformation. The Mesoproterozoic Nallamalai Group occurring in the east, contains fold-fault structures and cleavage which locally affect the unconformably overlying Srisaïlam Formation and Neoproterozoic Kurnool Group in the Palnad tract (northeast). Some workers consider the main deformation in the NFB as post-Kurnool (late Neoproterozoic); others link the deformation with the tectonic convergence of India and Antarctica along the Eastern Ghats. North of the Godavari graben, the major tectonic event in the Eastern Ghats is dated around 1000 Ma (Grenvillian).

The age of sedimentation of the Papaghni Group, the lowest unit, is constrained by c.1817 Ma mafic sill from this group in the west. The age of Nallamalai Group is constrained by the Chelima dyke (c.1350 Ma) and Agnigundala granite (c.1575 Ma) both intrusive into folded Nallamalai Group. New data from the eastern part of the NFB show that the intrusive Vellatur granite dome is syn- to late tectonic with respect to local F2 deformation which therefore, must be older than the Grenvillian tectonic events recorded in the Eastern Ghats. Further north, the fold-thrust structures of the Vamikonda range affecting both the Srisaïlam Formation and the unconformably overlying Kurnool Group, and deformation in the Palnad tract represent later events (Grenvillian and/or Pan-African). The granite-gneisses and schists bordering the NFB are affected by both early and later events and thrust over the Nallamalai Group.