Assembly of Archaean and Proterozoic Terranes Around Cauvery Shear Zone System: Constraints from Nd Model Ages of Charnockites

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Over the last fifteen years, geochronological data on the Southern Granulite Terrain (SGT), southern India lead to its broad division into Archaean and Neoproterozoic blocks. However, there is little consensus on the delineation of the terrane boundary that was designated by different authors as the Palghat-Cauvery suture zone, the Cauvery shear zone system (CSZ), the Karur-Kambam-Painavu-Trichur Shear Zone (KKPT) etc [eg., 1-3]. These models converge on an E-W tract ~ 400 x 100 km which is dissected by a complex network system of Neoproterozoic/Early Cambrian ductile shear zones ascribed to subduction and collision tectonics. Here we present, 125 Sm-Nd depleted mantle model ages (T_{DM}) for charnockite gneisses from the SGT. The regional distribution of Nd-model ages place further constraints on sub-terranes within the Archaean and Neoproterozoic granulite blocks that is relevant to understanding the regional crustal dynamics in terms of the assembly and break-up of eastern Gondwana.
Keywords: Archaean; Neoproterozoic; Granulites; Nd model ages; Geochronology

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