

Accepted Manuscript

Imprints of diverse mantle deformational episodes in the Cauvery Suture Zone,
South India

Sunil K. Roy, M. Ravi Kumar, Y.J. Bhaskar Rao, G. Srijyanthi, D. Srinagesh,
H.V. Satyanarayana, D. Sarkar

PII: S0301-9268(16)30044-4

DOI: <http://dx.doi.org/10.1016/j.precamres.2016.03.022>

Reference: PRECAM 4482

To appear in: *Precambrian Research*

Please cite this article as: S.K. Roy, M.R. Kumar, Y.J.B. Rao, G. Srijyanthi, D. Srinagesh, H.V. Satyanarayana, D. Sarkar, Imprints of diverse mantle deformational episodes in the Cauvery Suture Zone, South India, *Precambrian Research* (2016), doi: <http://dx.doi.org/10.1016/j.precamres.2016.03.022>

This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.



1 **Imprints of diverse mantle deformational**
2 **episodes in the Cauvery Suture Zone, South**
3 **India**

4 Sunil K. Roy^a, M. Ravi Kumar^{a,b,*}, Y.J. Bhaskar Rao^a, G. Srijayanthi^a, D.
5 Srinagesh^a, H.V. Satyanarayana^a, D. Sarkar^a

6 ^a*CSIR-National Geophysical Research Institute, Hyderabad-500007, India*

7 ^b*Institute of Seismological Research, Gandhinagar-382421, India*

8 **Abstract**

This study attempts to understand the upper mantle deformation pattern beneath the northern part of Southern Granulite Terrain (SGT), located to the south of Archean Dharwar craton in south India. The study region comprises the tectonic blocks - Nilgiri, Biligiri Rangan, Shevaroy and Madras blocks - separated from the northern part of Madurai block by the Cauvery Suture Zone (CSZ), associated with subduction-accretion-collision tectonics. Shear wave splitting observed on high quality XK(K)S (SKS, SKKS, PKS) waveforms from 119 teleseismic events recorded by 19 broadband seismic stations, mostly within the CSZ and the northern part of Madurai block, is utilized in this study. The 122 splitting measurements obtained, show an average delay time of 0.8 s between the fast and slow waves. Strong lateral variations in the fast polarization azimuths (FPA) are observed, with the splitting parameters at the majority of stations showing a dependence on back azimuth. Importantly, excluding the Madras block, a poor correlation between the FPA and the present day absolute plate motion (APM) direction is observed. This dominance of non-APM strain reflects complex anisotropy

*corresponding author

Email address: mravingri@gmail.com (M. Ravi Kumar)
Preprint submitted to Precambrian Research

Download English Version:

<https://daneshyari.com/en/article/6442223>

Download Persian Version:

<https://daneshyari.com/article/6442223>

[Daneshyari.com](https://daneshyari.com)