

## Accepted Manuscript

Effective elastic thickness along the conjugate passive margins of India, Madagascar and Antarctica: A re-evaluation using the Hermite multitaper Bouguer coherence application

R.T. Ratheesh-Kumar, Wenjiao Xiao

PII: S1367-9120(17)30130-X

DOI: <http://dx.doi.org/10.1016/j.jseaes.2017.03.019>

Reference: JAES 3016

To appear in: *Journal of Asian Earth Sciences*

Received Date: 15 January 2017

Revised Date: 15 March 2017

Accepted Date: 21 March 2017

Please cite this article as: Ratheesh-Kumar, R.T., Xiao, W., Effective elastic thickness along the conjugate passive margins of India, Madagascar and Antarctica: A re-evaluation using the Hermite multitaper Bouguer coherence application, *Journal of Asian Earth Sciences* (2017), doi: <http://dx.doi.org/10.1016/j.jseaes.2017.03.019>

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.



# Effective elastic thickness along the conjugate passive margins of India, Madagascar and Antarctica: A re-evaluation using the Hermite multitaper Bouguer coherence application

R.T. Ratheesh-Kumar<sup>a,\*</sup>, Wenjiao Xiao<sup>a,b,c</sup>

<sup>a</sup> Xinjiang Research Center for Mineral Resources, Xinjiang Institute of Ecology and Geography, Chinese Academy of Sciences, Urumqi 830011, China

<sup>b</sup> CAS Center for Excellence in Tibetan Plateau Earth Sciences, China

<sup>c</sup> University of Chinese Academy of Science, Beijing 100049, China

\* Corresponding Author: [ratheesh.geo@gmail.com](mailto:ratheesh.geo@gmail.com) (R.T. Ratheesh-Kumar)

## Abstract

Gondwana correlation studies had rationally positioned the western continental margin of India (WCMI) against the eastern continental margin of Madagascar (ECMM), and the eastern continental margin of India (ECMI) against the eastern Antarctica continental margin (EACM). This contribution computes the effective elastic thickness ( $Te$ ) of the lithospheres of these once-conjugated continental margins using the multitaper Bouguer coherence method. The results reveal significantly low strength values ( $Te \sim 2$  km) in the central segment of the WCMI that correlate with consistently low  $Te$  values (2-3 km) obtained throughout the entire marginal length of the ECMM. This result is consistent with the previous  $Te$  estimates of these margins, and confirms the idea that the low- $Te$  segments in the central part of the WCMI and along the ECMM represents paleo-rift inception points of the lithospheric margins that was thermally and mechanically weakened by the combined action of the Marion hotspot and lithospheric extension during the rifting. The uniformly low- $Te$  value

Download English Version:

<https://daneshyari.com/en/article/8914021>

Download Persian Version:

<https://daneshyari.com/article/8914021>

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