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UNDERSTANDING THE GEODYNAMIC EVOLUTION OF CENTRAL AND EASTERN INDIAN OCEAN BY GEOPHYSICAL INTERPRETATION

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ABSTRACT

The aim of this study is to understand the complex geodynamics of the Central and Eastern Indian Ocean using different geophysical methods. The methods used are, magnetism, gravity and surface heat flow. Understanding water column depth is an important factor and hence, bathymetry data was also used. This report encompasses a brief understanding of the study area with respect to the morphological features present and its tectonic evolution. In the methodology section, the explanation to how and from where the raw data was procured for all the geophysical parameters mentioned above is discussed. The various data processing procedures involved and the software used to carry them out is also referred to. Post data processing, the meaningful datasets of each of the geophysical attributes are plotted into map form, again using software and relevant scripting to construct interpretable results. After producing the results consisting of the Bathymetry map, the gravity anomaly plot, the magnetic anomaly plot and the surface heat flow plot, the prominent geophysical features and anomalies of each of the plots are interpreted. Following the interpretation, the geophysical anomalies that exist in each of the plots are compared with each other and correlated with previous studies to authenticate the results as well as emerge with interesting ideas pertaining to the tectonics and its relation with the geological features of the study area.