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Palaeocurrent Pattern of Permian Barakar and Motur Formations in South-Western Part of Satpura Basin, Central India

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Abstract

The Gondwana sequence in Satpura basin comprises Talchir, Barakar, Motur and Bijori formations. Palaeocurrent data evaluated from cross bedding as directional measure confined to Permian Barakar and Motur formations in Satpura basin. Palaeocurrent analysis deduced from 1700 cross stratification from Barakar and Motur formations yielded northerly and north-westerly palaeocurrent direction and palaeoslope. Rose diagrams of palaeocurrent data show strong unimodal pattern and moderate to high variability response to deltaic environment and braided river in Barakar and braided, low sinuous river for Motur sedimentation. The mean palaeocurrent for Barakar Formation is Normaland for Motur sandstone it is 329.09°. Modest change in mean direction between Barakar and Motur, suggest post tectonic stable phase of sedimentation. Deviation in statistical parameter between Barakar and Motur may result due to channel flow variability, climatic variability, syn-depositional subsidence or shift in depositional axis of basin due to tectonic activity.

Keyword: Palaeocurrent direction, Palaeoslope, Cross stratification, Barakar and Motur sandstone, Satpura Gondwana basin, Central India.