Title: Paleo-geographic Reconstructions of the Indian Subcontinent: Constraints from Paleo-magnetic Study of Eastern Flood Basalt (EFB)

Abstract:
The evolution of paleo-geographic reconstruction of Indian subcontinent is a complex puzzle that has intrigued geoscientists since decades. The breakup of the Gondwana supercontinent and the subsequent drift of the Indian plate have left behind a trail of geological evidence, including extensive volcanic eruptions and resulting the formations of Large igneous Provinces (LIPs). Deccan flood basalt and Eastern flood basalt (EFB) are the outcome of such massive volcanism in India. In this work, we focus on the Eastern flood basalt (EFB) which includes Rajmahal Trap and Sylhet Trap; two volcanic provinces in eastern India, to decipher the positions of the Indian plate in geological past, i.e. at the time of EFB formation. The EFB is believed to be formed from Keruguelen mantle plume or hotspot at about 120 Ma ago; which triggered the rift between India, Australia and Antarctica. Integrated Paleomagnetic and geochronological data sets from EFB are crucial for recreating the paleogeography of the Indian subcontinent during the Cretaceous Period. These data set offers insights into the paleo-latitudinal position of the Indian plate at the time of volcanic activity. These integrated paleo-magnetism and geochronological data with plate tectonic models, we aim to refine our understanding of how and in which path the Indian plate migrated after its separation from Gondwana supercontinent. This reconstruction will shed light on the paleogeographic configuration of the Indian subcontinent, including its position relative to other landmasses like Australia and Antarctica. Ultimately, this research will contribute to a more comprehensive understanding of the dynamic geological history of the Indian subcontinent and its role in the broader context of global plate tectonics and paleogeography.