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Título:

STRUCTURE AND EVOLUTION OF THE INTRAPLATE SEAMOUNT IN THE NORTHERN PART OF THE NINETYEAST RIDGE DERIVED FROM THE INTEGRATED ANALYSIS OF GEOPHYSICAL DATA

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Resumen:

The linear Ninetyeast Ridge (NER) is the longest oceanic intraplate volcanic edifice and main feature in the Eastern Indian Ocean. Many seamounts are located on the ridge, whose origin and age remain unclear due to the lack of samples of the bedrock of which they are composed. Carbonate sedimentary caps on these seamounts prevent their direct geological sampling by dredging, therefore indirect geophysical methods are an alternative. Such integrated geophysical studies (the main methods are multibeam bathymetry and magnetic surveys) were carried out in cruise #42 of the R/V Akademik Boris Petrov in 2017 on a large seamount at the base of the NER's western slope near 0.5 S. The collected data also includes seismic reflection data that reveal morphology, fault tectonics, depth structure, and an assumed origin of this

volcanic feature. The Ninetyeast Ridge was formed by the Kerguelen plume magmatism at 50 S in the giant N-S fault. The seamount was formed mainly to the north as a result of two-stage magmatism in a transverse strike-slip fault. The first stage (47 Ma) formed the main western part of the seamount at 20 S. The second stage (23 Ma) formed its eastern part at 8 S. The time intervals between the formation of the main massif of the Ninetyeast Ridge and the stages of subsequent magmatism that formed the western and eastern parts of the seamount are approximately 31 and 55 Ma, respectively.

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