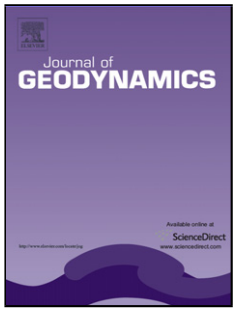

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Lateral Variation in Crustal and Mantle Structure in Bay of Bengal Based on Surface Wave Data

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Abstract

Surface waves generated by earthquakes that occurred near Sumatra, Andaman-Nicobar Island chain and Sunda arc are used to estimate crustal and upper mantle S wave velocity structure of Bay of Bengal. Records of these seismic events at various stations located along the eastern coast of India and a few stations in the north eastern part of India are selected for such analysis. These stations lie within regional distance of the selected earthquakes. The selected events are shallow focused with magnitude greater than 5.5. Data of 65, 37, 36, 53 and 36 events recorded at Shillong, Bokaro, Visakhapatnam, Chennai and Trivandrum stations respectively are used for this purpose. The ray paths from the earthquake source to the recording stations cover different parts of the Bay of Bengal.

Multiple Filtering Technique (MFT) is applied to compute the group velocities of surface waves from the available data. The dispersion curves thus obtained for this data set are within the period range of 15 to 120 s. Joint inversion of Rayleigh and Love wave group velocity is carried