MOTION OF THE PLATES AS FUNCTION OF THE LOW-Q ZONES BENEATH SPREADING CENTERS

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ABSTRACT

Fundamental-mode Rayleigh waves generated by several earthquakes situated along great-circle paths between pairs of seismograph stations on the American and European coastal regions and on Atlantic islands have been analyzed to obtain anelastic attenuation coefficients. Inversion of the attenuation data yield a model for the Mid-Atlantic Ridge.

The mean results obtained in this study are : (1) A strong low-Q zone is situated in the upper mantle beneath the bottom of the lithosphere (2) the bottom of the Asthenosphere is situated at a depth of around 250 km.

Comparison of the above results with earlier studies in the Pacific Ocean suggest that the velocity of plate motion is slower when attenuation coefficients and internal friction values are smaller and vice versa.

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