GL03712

The reality of these three regions during the Pleistocene has been tested using a south to north traverse of Eltanin cores from 60°S to 40°S in the southwestern Indian ocean. Using percent Antarctissa strelkovi as the paleoclimatic index, and the 62 to 250 micron fraction of the ice-rafted debris as the glacial index, it is shown that strong positive correlations exist between higher water temperature and glacial debris accumulation rates south of a position roughly coinciding with the present Antarctic Convergence. To the north of this discontinuity, the correlation between the same parameters are, in contrast, strongly negative, as required by the model. In the vicinity of the convergence, no significant correlation exists between paleotemperature and debris accumulation. One core slightly to the north of the present Antarctic Convergence reveals a marked change in the correlation at about t = 0.33 m.y., consistent with migration of the GDCR to the south at that time.

It is concluded that the model is correct in principle.

TRANSPORT IN HUDSON AND WILMINGTON SUBMARINE CANYONS

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Lower stands of sea level in the Pleistocene resulted in the extension of rivers and glacial outwash plains across the continental shelf off the northeastern United States. The Hudson channel-canyon system is the most notable of these now submerged features. Study of Pleistocene deposits from the continental rise and abyssal plain off the eastern margin of the United States has revealed the presence of numerous turbidite sequences, which appear to have been transported seaward through submarine canyons in the area. This Pleistocene setting of very dynamic transport of coarse-grained material downcanyon, does not appear to be the prominent process today in at least two canyons, Hudson and Wilmington. In each of these canyons there is a distinct reversal of flow up and down canyon due to tidal forces and velocities ranging from 2 to 56 cm/sec. In the head of Hudson Canyon a net transport downcanyon does appear to prevail whereas in Wilmington Canyon the net transport is across the southwest trending canyon to the northwest. Studies thus far indicate that only fine sediment is being carried seaward through Hudson Canyon, but in Wilmington Canyon there appears to be a stronger upcanyon flow than downcanyon.

ELECTRICAL METHODS APPLIED IN GEOTHERMAL EXPLORATION

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The effect of anomalously high temperatures in a water-laden rock is to increase the conductivity significantly. As a consequence, the measurement of electrical conductivity in the ground has become a primary method used in exploration for geothermal reservoirs. It has been recognized that virtually all commercial geothermal systems have electrical resistivities lower than 10 ohm-meters, and sometimes lower than one ohm-meter. For effective use in exploration, methods for measuring resistivity must be capable of detecting such low values at depths as great as five kilometers. Conventional direct-current methods may be used, if power capabilities are scaled up considerably from those used in normal surveys. However, electromagnetic induction methods provide a greater capacity for penetration for a given power capability, and provide more lateral resolution than does the direct-current approach.

CHARACTER DISPLACEMENT IN THE

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The continuous nature of micr
trol afforded by paleomagnetic t
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decrease in variability.

CLIMATICALLY RELATED CHANGES IN
THE PAST 500,000 YEARS

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sity, Providence, Rhode I

Analyses of planktonic Foramin
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spanning the last 500,000 year

The major feature of the
Current. This current is resp
and sea-ice distributions and
Foraminifera and $CaCO_3$ in the

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The "Glacial" mode predom