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QUATERNARY GEOLOGICAL RESEARCH OF THE CONTINENTAL SHELF AND SLOPE OFF PANADURA

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Geophysical and sedimentological data collected on the continental shelf and slope off Panadura provide a unique opportunity to investigate the morphology of the seabed and its relation to sea level changes.

Although complicated by fluctuating sea levels during the quaternary the morphology of the shelf has been basically controlled by the relief of the underlying crystalline basement. Shallow seismic profiles across the region indicate that the basement in the area is overlain only by a thin vernier of sediments.

Nevertheless quaternary sea level changes have left their imprint on the shelf relief and four morphological zones have been identified on the bathymetric map of the area.

A nearshore slope is found in depths shallower than 30m. and seismic records indicate buried river channels. The inner shelf apron extends from the foot of the nearshore slope and is marked by a slight, but noticeable increase in gradient. The middle and outer shelf plain lies between the 45 & 55m isobaths and has a very gentle slope seawards. A feature of interest in this area is the series of rolling low hillocks and depressions.

Seismic data show similar features in the sub bottom surface and piston coring in the area has indicated a reef buried in 5m of sediments.

Off Panadura the shelf break is at a depth of 55m and a prominent submarine canyon is found going down to depths of over 2500m.

By combining the geophysical data with bathymetric, sedimentological results and comparing them with other areas of the world, a model of the late Pleistocene - Holocene history of the shelf has been formulated.