

EVIDENCE OF BOTTOM CURRENT INFLUENCE ON SEDIMENTATION DURING THE NEOGENE ALONG THE CAMPOS SLOPE, SW ATLANTIC MARGIN

1VIANA, A.R., 1ALMEIDA JR., W., 1MAGALHÃES, J.L.C., 1ANDRADE, S.B., 1HERCOS, C.M.; 1PETROBRAS – E&P - Campos Basin, Macaé, Brazil

Geophysical and sedimentological data indicate that bottom currents played a fundamental role in the edification of the Campos Continental Slope, at least along the Neogene and Quaternary. Sediment drifts are observed in 2D and 3D seismic data. Drifts external geometry and internal reflection pattern suggest a predominant action of northward flowing currents (Southern ocean Current) occurring from the middle to the lower slope (650-1200m). Upper Quaternary sediments from that zone are composed of silty to sandy mud, with rare sand laminations, highly bioturbated, with no primary structure. On the upper slope, below the southward flowing Brazil Current, sub-bottom profiles and side-scan sonar records indicate the development of several bedforms styles. On the uppermost slope, between 200-300m, longitudinal lineations and transverse bedforms (dunes and 3D sandwaves) are observed. Sediments are siliciclastic to mixed silty to muddy sand, with rare primary traction structure preserved. Downslope, from 300 to 650m, linear crested bedforms, few meters high (2-7m) are developed. In this zone an alongslope similarity on the depositional style throughout more than 50Km corroborates the current control on the sedimentation. The deposits are composed of 1m silty mud overlying a decimetric layer of silty sand that grades downslope to a highly oxidised, bioturbated fine-grained interval. The variability of the sediment accumulation rate (ranging from 2 to 30cm/Ky) is related to high frequency temporal and local modifications on the intensity of both Brazil and Southern Ocean currents.