



A high-resolution Holocene record on the Southern Brazilian shelf: paleoenvironmental implications:

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A high resolution multi-proxy record has been used to determine environmental changes during the Holocene on the southern Brazilian shelf. Present oceanographic conditions reveal wind and freshwater input as determinants of short-term productivity changes in the study area. Thus, magnetic susceptibility and grain size parameter variations, together with proxies of productivity (organic carbon, carbon accumulation rate, Ba, Sr and Ca content, Ba/Al, Ba/Ti and Al/Ti ratios) were analyzed and compared with proxies of redox condition (V/Ti ratio), terrigenous input (Fe/Ca and Ti/Ca ratios) as well as other Element/Ti ratios, in order to evaluate the

paleoceanographic and paleoclimatic changes over the period. Sediment samples were taken every 2 cm along the 506 cm long core and AMS radiocarbon datings were undertaken every 50 cm. The core covers a time interval of about 7,650 years, with sedimentation rates varying from 0.025 to 0.250 cm.yr⁻¹, which represent time intervals of between 8 and 80 years per sample. Results show a clear change in the sedimentation rate at about 2,800 years B.P. All grain size and elemental results indicate the occurrence changes between 5,200 and 5,000 yr B.P. as well as between

3,000 and 2,800 yrs B.P. A comparison of our results with palynological information available for the continental areas suggests that the sedimentary changes in this

last interval may be correlated with the onset of modern climatic conditions in South America and, especially, with the onset of the Plata Plume Water, a water mass that carries cold, less saline waters towards the north. Minor changes are observed at ca 1,500 years B.P. and are orrelated with an increase in atmospheric moisture.