



## **AN ATTEMPT TO USE COLOR AS A TOOL FOR HIGH RESOLUTION CORRELATIONS BETWEEN ESTUARINE SEDIMENTARY CORES FROM ALGARVE (PORTUGAL)**

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Nowadays, paleoenvironmental and climatological researches focus on studying short-term climatic changes and one of the more sensitive environments for recording those short-term climatic variations are the high sedimentation rate of coastal regions. Accordingly, 4 estuaries from the Algarve region, south of Portugal, have been cored in order to study sedimentary and climatic variations during recent times (c.a. 5000 yrs). For this purpose, we applied sampling and analytical techniques from deep-sea studies, allowing the acquirement of almost continuous data profiles, as the color data obtained with the spectrophotometer Colortron. Hand corer was used for sampling, and for each estuary three cores were collected c.a. 50 m apart, perpendicularly to the main channel of the estuary. Each sediment core had three centimeters of diameter and c.a. three meters length. The magnetic susceptibility and the color of the sediments were acquired every five centimeters, using the magneto-susceptometer SM-20 and the spectrophotometer Colortron, respectively. Sediment core surface was digitized using the Scanner Mustek 1200 A3 PRO. Sediment samples have been taken every five centimeters of the cores and freeze for subsequent major and minor elements analysis, iron oxidation state analysis, organic matter concentration analysis, grain size and mineralogy. A good reproducibility was observed for both magneto-susceptometer and color instruments. The viability of acquiring digital images from core surface with the scanner was observed in opposition to the use of photographic equipment, reducing the problems related to illumination and amplification of photographs. Some correlation between the color parameters (CIE Lab) and the magnetic

susceptibility has already been observed. We aim to find some correlation between the chemical composition, mineralogy, grain size and magnetic susceptibility with the color parameters Lab for the estuarine sediments. If observed, color parameters will be useful for obtaining quick and cheap profiles of sedimentary records which will allow a cross correlation between cores and a better assessment of sediment accumulation rate variations. The higher the resolution of data acquired, the better will be the correlation between cores. Therefore, it will allow a better characterization of sedimentary environments and a more accurate observation of small time scale variations. This work is from a research project integrated in the POCTI from the Fundação para a Ciência e Tecnologia, supported by FEDER and OE (POCTI/CTA/39733/2001).