

# 32<sup>nd</sup> IGC - Florence, 2004

## Abstract title

CORRELATION OF ESTUARINE SEDIMENTARY CORES BASED ON COLOR ANALYSIS: AN EXAMPLE FROM THE ALGARVE REGION (PORTUGAL)

## Authors

MESTRE NÉLIA<sup>1</sup>, VEIGA-PIRES CRISTINA CARVALHO<sup>1</sup>

presenter's e-mail: a13906@ualg.pt

1 - CIMA - University of the Algarve

## Keywords

sediment profiles

color

spectrophotometry

geochemistry

## Abstract

Coastal zones play a significant role in the regional development and have been an important area for human occupation through time. The study of estuarine sediments applied to sea level changes had always been of extreme importance, as it reflects the coastal line evolution, either by local, regional or global changes. In this sense, efforts have been made in order to develop new techniques that enable the acquirement of high-resolution sedimentary data. For the first time, sampling and analytical techniques from deep-sea studies were applied to estuarine environment. Sediment cores were collected in 4 estuaries from the Algarve region (Guadiana, Almargem, Arade and Alvor), south of Portugal. A hand corer was used, 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. Sedimentary units will then be characterized by their geochemical properties as well as their color and magnetic susceptibility. This will allow a high resolution of unit limits and correlation between cores, leading to a better understanding of the recent evolution of estuarine systems from Algarve. This work is from a research project integrated in the POCTI from the Fundação para a Ciência e Tecnologia, supported by FEDER and OE.

**ACCEPTED as Poster Presentation**

**in session: "G21.04 - Coastal and deltaic depositional systems"**