

## **Sedimentological and Paleo-Oceanographic Changed as Recorded in a Pistoncore of the Pen Duick Escarpment, Gulf of Cadiz**

**A. Chiguer<sup>1</sup>, T.C.E. van Weering<sup>2</sup>, F. Mienis<sup>2</sup>, H.C. de Stigter<sup>2</sup>, H. de Haas<sup>2</sup>, and N. Hamoumi<sup>1</sup>**

<sup>1</sup> Mohammed V University Sciences Faculty Agdal Rabat, Morocco

<sup>2</sup> Royal Netherlands Institute for Sea Research, Texel, The Netherlands Vrije Universiteit, Amsterdam, The Netherlands

The Pen Duick Escarpment is located 30 nautical miles off shore the Moroccan coast in the Gulf of Cadiz and is a fault formed in a compressional system.

The area surrounding the escarpment is characterised by a very complex geological history and many mud volcanoes are present, e.g. Gemini mud volcano. Sedimentation at the top of Pen Duick Escarpment might be affected by the mud volcano activity, as well as vertical particle flux. Main aim of this project is to study the sedimentological processes on top of the Pen Duick Escarpment and relate them to changes of the last glacial-interglacial period and to detect the influence of mud volcano activity on the sedimentological processes in the area. To study the sedimentary changes in the area, a pistoncore M2005-12 was analysed by the use of X-ray fluorescence (XRF) data, vertical grain size distribution and measurements of the stable oxygen isotopes on planctonic foraminifera. Analysis of the core shows that the core consists of mainly silty clay with foraminifera. Several sandy layers were observed in the core at different depths. In some zones coral fragments occur, which seem to have been transported to the core site. Stable isotope analysis of planctonic foraminifera shows a repetition of recent Holocene material in the pistoncore. The changes in composition and mineralogy of the sediment in the core might be related to sedimentological processes like turbidites or the activity of nearby situated mud volcanoes.