Monthly samples collected from November 1978 to June 1980 were compared to a reference sample collected before the spread of the slick reached the Morlaix estuary showed that test modifications increased and growth rates decreased for a year following the oil spill. Within one year after the spill 21% of tests showed decreased growth rates, 8% were deformed and 50% were parasitized; these numbers declined to near pre-oiling levels two years after the wreck, suggesting a probable effect of the oil pollution. Exactly which mechanism (toxic compounds in the oil, oxygen depletion and decreased nutrients resulting from the slick, among others) caused these effects is unknown. Like many other groups of marine organisms, foraminifera probably recovered from the oil spill within a few years.
A survey undertaken in 2010, 32 years after the spill, revealed that live *P. paralium* still occur at the same site in the Morlaix estuary, but the percentages of deformed specimens (3%) and specimens showing evidence of slow growth (2%) have decreased and are comparable to pre-oil levels. Parasitism occurs at 15%, higher than pre-oil levels (4%), but decreased since the year following the oil spill (50%). Parasitism may indicate compromised fitness which could be due to stress. Morphologic abnormalities and parasitism observed in 2010 could be the result of pollutants (oil, toxic chemicals, etc.) entering the Morlaix estuary from daily activities such as boating and agriculture and may not be due to the lingering effects of the *Amoco Cadiz* spilled oil.

Ventura, Cristina (B2 – Poster presentation)

Benthic foraminifera assemblages as responses to climate variations during MIS 14 to 9 on the mid-depth Portuguese margin

Cristina Ventura[1], Antje H. L. Voelker[1], Francisco Fatela[2]

[1]LNEG/CIMAR, Portugal
[2]FCUL, Portugal
E-mail: cristina.ventura@lneg.pt

Benthic foraminifera are a very important group of the deep-sea-bottom biota and the faunal composition reflects their living conditions, namely salinity, temperature and productivity. In this work the benthic foraminifera are used to characterize the deep water and productivity conditions during the glacial/interglacial cycles from Marine Isotopic Stage (MIS) 14 to MIS 9 (314.88ka to 554.58ka).
We produced high resolution foraminifera data from Core MD03 – 2699 retrieved from the slope of the western Portuguese continental margin, off Peniche, from a water depth of 1895 m. We examined 202 samples to characterize the glacial and the interglacial periods from MIS 14 to MIS 9, and we will consider just the most abundant and frequent species *Globocassidulina subglobosa* (Brady), *Epistominella exigua* (Brady), *Eilohedra levicula* (Resig), *Fursenkoina fusiformis* (Williamson), *Uvigerina peregrina* (Cushman) and *Cassidulina laevigata* (d´Orbigny).
The dominant species during the stable interglacial periods (MIS 11c and MIS 9e) were *Globocassidulina subglobosa*, *Epistominella exigua* and *Eilohedra levicula*. *Uvigerina peregrina* and *Cassidulina laevigata* were associated with the cold periods, probably related to the phases of permanent upwelling. *Cassidulina laevigata* had its greatest abundance during MIS 14 and 12, where it reached values of 12% and 19%, respectively. *Uvigerina peregrina*, was also very important in these periods but did not 10%. During MIS 10 dominance of the population is ensured by *U. peregrina* reaching 15%, while *C. laevigata* became mess abundance (max. 9).
Fursenkoina fusiformis marked the transitions from the glacial to the interglacial periods when an increased supply of organic matter of continental origin may have existed.
Overall, the benthic foraminifera fauna at this site seems move to be driven by food supply than by the bottom currents.

Vicedo, Vicent (C3 - Oral presentation)

The Rhapydioninds as biostratigraphical markers in the Late Cretaceous restricted, shallow carbonate sediments

Vincent Vicedo[1]

[1]Universitat Autònoma De Barcelona, Spain