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Morphobathymetric analyses and recent sedimentary processes of the turbiditic system of the Capbreton submarine canyon (SARGASS cruise 2010)

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The Capbreton canyon is considered as one of the deepest of the world. Well known in is proximal part (Cirac, 2011; Mulder 2001; Gaudin, 2006), the canyon has not been studied completely yet, from the head to the distal lobes. This study is now possible due to the SARGASS cruise (2010) which occurred on the R/V Pourquoi Pas?. The studied area is vast, compound of the distal parts of Celtic, Armorican and Cap-Ferret turbiditic systems, in addition to the entire Capbreton system. The study will focus on the large acquired data set : bathymetry and sea-beam data, Penfeld penetrometer, VHR seismic, SAR-PASISAR profiles and about twenty marine cores.
The complete morphobathymetric study of the Capbreton system reveals a course of more than 460 km for 4500m difference in height, following a regular slope. The bed of the canyon is highly sinuous, lined by abandoned meanders. Numerous staged terraces are present all along the thalweg, grouped by preferential high. The north flank show a hill which present local difference in height of more than 900m. It also shows a slide scar of more than 150 km^2. As for the south flank, it presents a succession of confluing hanging valleys .
The sedimentary processes in the canyon are currently studied. In particular, the analyses of the cores located on the canyons flanks and in the middle of its thalweg highlights some pronounced distinct processes. The PP10-17 core shows the sedimentary process of the north margin en records climatic changes. The sedimentation rates is there of 10cm/1000 years. The PP10-05 and PP10-06 cores illustrate the current turbiditic processes which occurred on the terraces along the thalweg. The PP10-05 core records a sedimentation rate at least of 180cm/1000 years, showing a ratio of 20 for the sedimentation rate from the bottom of the canyon to the top of its flanks.