

UNDERSEA FEATURE NAME PROPOSAL

(Sea NOTE overleaf)

Note: The boxes will expand as you fill the form.

| | | | |
|-----------------------|------------|----------------------|----------------|
| Name Proposed: | Açu Canyon | Ocean or Sea: | Atlantic Ocean |
|-----------------------|------------|----------------------|----------------|

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|--|------|---------|-----------------|-----------------|--------------------|----------------------------|
| Geometry that best defines the feature (Yes/No) : | | | | | | |
| Point | Line | Polygon | Multiple points | Multiple lines* | Multiple polygons* | Combination of geometries* |
| Yes | Yes | | | | | |

* Geometry should be clearly distinguished when providing the coordinates below.

| | Lat. (e.g. 63°32.6'N) | Long. (e.g. 046°21.3'W) |
|---------------------|----------------------------|-----------------------------|
| | (Central Point) 04°41.33'S | (Central Point) 036°36.12'W |
| Coordinates: | 4° .41.87 S | 36° .36.03 W |
| | 4° .41.33 S | 36° .36.05 W |
| | 4° .40.75 S | 36° .35.73 W |
| | 4° .40.18V | 36° .35.38 W |
| | 4° .39.75 S | 36° .35.40 W |
| | 4° .39.30 S | 36° .34.75 W |
| | 4° .39.07 S | 36° .34.73 W |
| | 4° .38.70 S | 36° .34.87 W |
| | 4° .38.42 S | 36° .34.92 W |
| | 4° .38.10 S | 36° .34.68 W |
| | 4° .37.42 S | 36° .33.62 W |
| | 4° .36.90 S | 36° .33.05 W |
| | 4° .36.38 S | 36° .32.30 W |
| | 4° .38.02 S | 36° .34.53 W |
| | 4° .37.68 S | 36° .34.70 W |
| | 4° .36.88 S | 36° .34.35 W |
| 4° .36.33 S | 36° .34.27 W | |
| 4° .35.47 S | 36° .34.70 W | |

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|-----------------------------|------------------------|--------|-------------------------|-------------------------------------|
| Feature Description: | Maximum Depth: | 1205 m | Steepness : | 50° - 25° |
| | Minimum Depth : | 108 m | Shape : | |
| | Total Relief : | 1097 m | Dimension/Size : | 1km-6,2km width X 14,5 km longer |

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| Associated Features: | Guará Bank and Sirius Bank |
|-----------------------------|----------------------------|

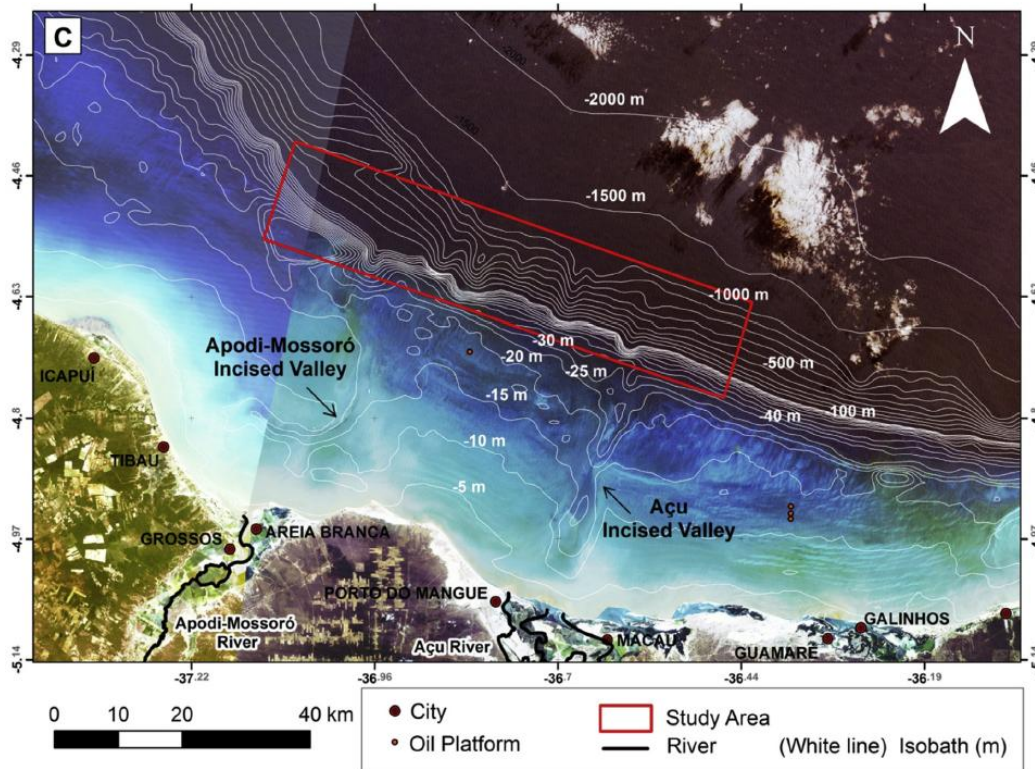
| | | |
|------------------------------|-----------------------------|--|
| Chart/Map References: | Shown Named on Map/Chart: | |
| | Shown Unnamed on Map/Chart: | |
| | Within Area of Map/Chart: | |

| | |
|---|--|
| Reason for Choice of Name (if a person, state how associated with the feature to be named): | Açu is the name of a coastal city in the Rio Grande do Norte state, Brazil, and also one of the most important river in this area. Açu is a Tupi indigenous word that means big, bigger or huge. This name was published in the scientific paper Almeida, N., Vital, H., and Gomes, M., 2015. Morphology of submarine canyons along the continental margin of the Potiguar Basin, NE Brazil. |
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| | | |
|-------------------------|------------------------|----------|
| Discovery Facts: | Discovery Date: | May 2011 |
|-------------------------|------------------------|----------|

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| | Discoverer (Individual, Ship): | |
| Supporting Survey Data, including Track Controls: | Date of Survey: | May 2011 |
| | Survey Ship: | NHi Sirius (Directorate of Hydrography and Navigation) |
| | Sounding Equipment: | Multibeam - Simrad EM 302 |
| | Type of Navigation: | DGPS |
| | Estimated Horizontal Accuracy (nm): | |
| | Survey Track Spacing: | Full bottom covered |
| | Supporting material can be submitted as Annex in analog or digital form. | |

LOCATION



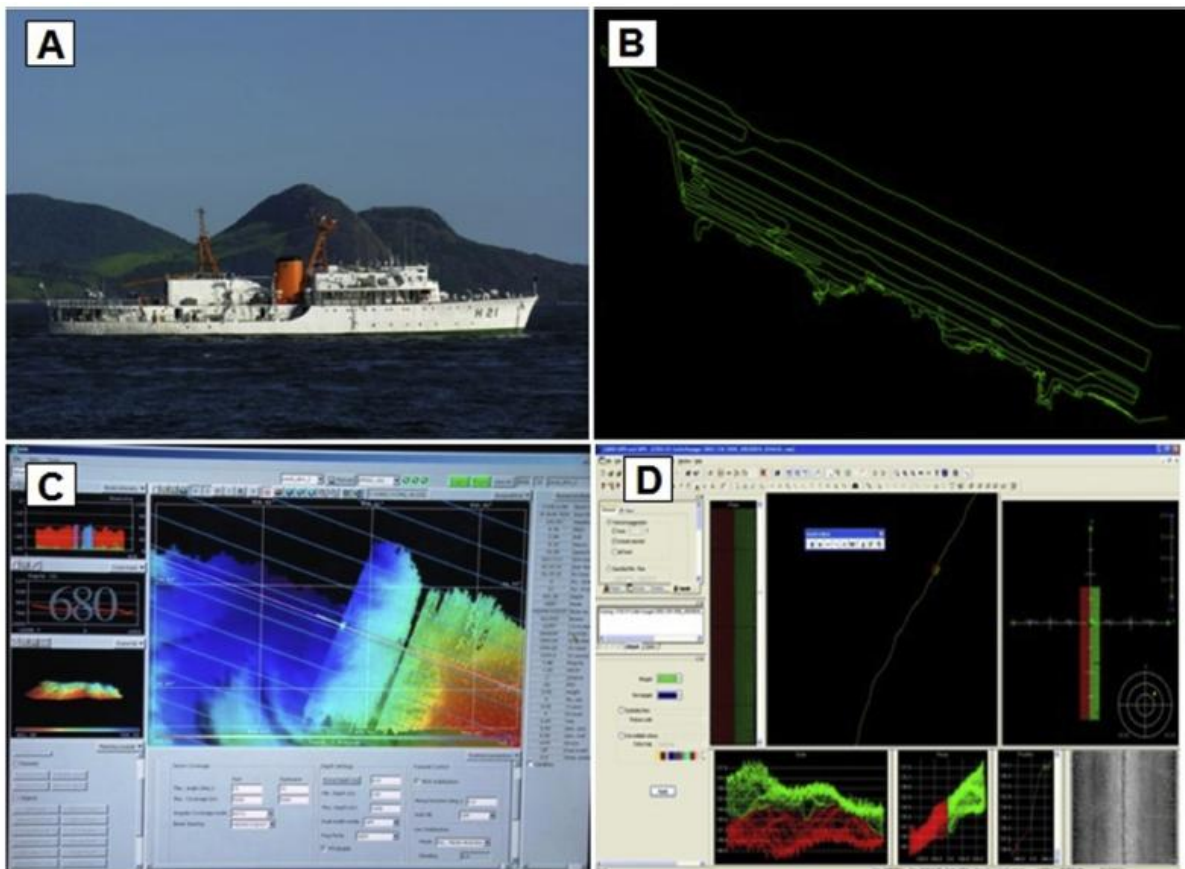
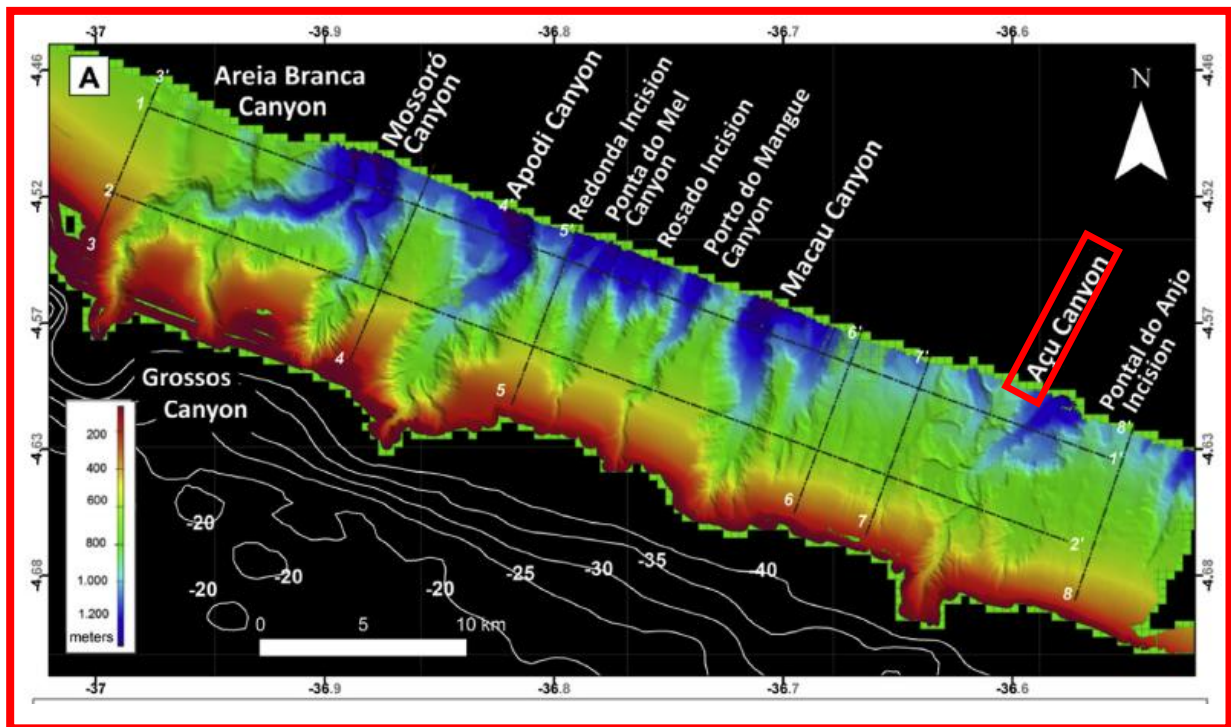


Fig. 2. A) Hydroceanographic Vessel Sirius (NH21) from the Brazilian Navy used for data acquisition. B) Acquisition lines of the bathymetric data. C) SIS software used for automatic acquisition of the bathymetric data. D) Example of multibeam echosounder data processed using Caris HIPS (INFOMAR, 2013).



Research paper

Morphology of submarine canyons along the continental margin of the Potiguar Basin, NE Brazil

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ABSTRACT

New insights into equatorial slope morphology were acquired through analysis of the continental margin of the Potiguar Basin (NE Brazil). In this paper, we present the first full data coverage of the seafloor between the upper and middle continental slopes (100–1300 m) adjacent to the Brazilian equatorial margin, developed using multibeam bathymetric data. Some of the submarine canyons mapped in this study have wall gradients greater than 35°. Wide (~1700 km) and deep (~250 m) incisions are present on the continental slope and can be linked to incised valleys that are underfilled or incised only on the outer shelf at depths up to 60 m. Two different types of canyons were identified. Canyons of one type are characterized by heads that indent the shelf edge, association with incised valleys and large fluvial systems, high sinuosity, 'V' shapes, and terraces along margins, in addition to erosive features such as landslides and gullies. These characteristics suggest that canyons of this type are associated with the deposition of submarine fan systems, which are considered permeable hydrocarbon reservoirs, on the base of the continental slope. The presence of gullies and sediment waves illustrates the role of bottom currents in the shaping of the slope. The enlargement of the canyons in the study area and the changes in their courses where they cross an important fault suggest that tectonic activity has probably also influenced the morphology of the deep-water environments of the Potiguar Basin. The results of this study constitute initial steps in describing and understanding submarine canyons as part of the equatorial continental Brazilian margin.

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