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Preliminary results from the high resolution deep-tow seismic survey in the offshore Nicaragua continental margin

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During RV Sonne cruise SO173-1 in the framework of SFB574 (Volatiles and Fluids in Subduction Zones) in July/August 2003, a new area offshore Nicaragua has been surveyed with the IFM-GEOMAR deep-towed multichannel seismic system along with the deep-towed sidescan sonar system. In total 13 NW-SE striking profiles running parallel to the continental slope were recorded in water depths between 800 and 2500 m covering an area of approximately 700 square km. This study presents the first results from the ongoing investigations on these seismic profiles.

First analysis of the bathymetric and sidescan sonar data show that the continental margin off Nicaragua is dominated by deeply incised canyons and numerous mound structures, as well as two slides at the lower slope. Mounds are different in size and shape. On the upper continental slope a large mound rises up to 150 m above the surrounding seafloor. All deep-towed seismic profiles show well stratified, slightly deformed sedimentary layers of 400 – 500 ms TWT thickness. They are bounded by a band of strong reflections which seem to form the recent base for the deeply incised canyons. Underneath occurs a less reflective zone, in which a BSR is visible in most parts of the survey area.