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**GEOPHYSICAL STUDY OF THE ROSS SEA (ANTARCTICA)**

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The interpretation of a large amount of multichannel seismic reflection sections recorded during the first Italian geophysical cruises to Antarctica (1978-88, 1988-89), performed by OGS-Trieste, has revealed new and interesting elements about the structure, the stratigraphy and the evolution of the Pacific sector of the Antarctic Platform. Strong reverberations connected to the shallow water and hard sea-bottom environment have been greatly attenuated by means of careful reprocessing of the original data. Weighted and muted stack techniques have proved to be very efficient in multiple removal. The new processing sequence has been applied to all the survey data providing seismic sections virtually free from multiples in areas of crucial interest for the understanding and reconstruction of the structural condition of the area. From the interpretation of all the available seismic data a detailed tectonic scheme was carried out.

Widespread rift movements affected a Precambrian-Paleozoic basement and the overlying sedimentary sequence. Two main extensive phases (Middle Jurassic-Upper Cretaceous and Paleocene-Present) led to the formation of three large N-S trending basins. Synsedimentary downwarping has been particularly active in the eastern part of the Ross Sea. Sediments from Oligocene to Plio-Quaternary locally reach a remarkable thickness and are often displaced by systems of listric faults.

The rift results to be associated with transcurrent movements and magmatic activity. Diffused and huge intrusions and effusions show up in the western part of the bay and seem connected to a combination of stretching and transtensive strike-slip faulting.

