
HIGH RESOLUTION BATHYMETRY AND SHALLOW SEISMIC STUDIES IN THE IZMIR GULF, AEGEAN SEA

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Abstract

A new poster, based upon high resolution multibeam sonar surveys, shows the bathymetry of the Izmir Gulf basin. The image reveals in detail many features of the offshore. The shallow seismic investigations was done on the same profile of bathymetry and interpreted at advance geophysics processing and G.I.S programs.

Keywords: Bathymetry, Aegean Sea, Seismics, Swath Mapping, Gis

Material and Methods

The bathymetry of Izmir Gulf off western Turkey [1] is shown in this poster at 1:50,000 scale on the Universal Transverse Mercator (UTM) Projection (Zone 35), with WGS-84 datum. Water depths change from about 1m to over 60m in the Izmir Gulf. The survey was carried out between on June 2009 and April 2010 by the vessels R/V K.Piri Reis and Dokuz Eylul-1 using an ODOM ES3 multibeam echo sounder. The ES3 has 480 beams operating at 240 kHz spread over an arc of up to 150⁰ total coverage, giving maximum swath coverage of up to 3 times of the water depth. Besides, seismic data collected by Triton SB-Logger and Strata Box Marine Geophysical Instrument. The study area approximately 380 km² and in this area the survey involved some 685,218 km of track.

Results

a) We produce high quality and standardized database of the seafloor in the Izmir Gulf, organized in the Marine G.I.S. b) This cartography will help at all sectors with interests in this area and allow to have an element of great help for the integral management of the coastal area and continental shelf and show the variety of the relief, the superficial geology [2], different types of sediments, and sedimentary bedforms generated, etc..

References

- 1 - Ten Veen, J.H., Boulton, S.J. and Alcicek, M.C., 2009. From palaeotectonics to neotectonics in the Neotethys realm: The importance of kinematic decoupling and inherited structural grain in SW Anatolia (Turkey). *Tectonophysics* 473, 261-281.
- 2 - Bozkurt, E. and Sozbilir, H., 2004. Tectonic evolution of the Gediz graben: field evidence for an episodic, two-stage extension in western Turkey. *Geol. Mag.* 141 (1), 63-79.