



Mapping of active faults based on the analysis of high-resolution seismic reflection profiles in offshore Montenegro

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High-resolution seismic-reflection data analysis is considered as important tool for mapping of active tectonic faults, since seismic exploration methods on varied scales can image subsurface structures of different depth ranges. Mapping of active faults for the offshore area of Montenegro is performed in Petrel software, using reflection database consist of 2D profiles in length of about 3.500 kilometers and 311 square kilometers of 3D seismics, acquired from 1979 to 2003.

Montenegro offshore area is influenced by recent tectonic activity with numerous faults, folded faults and over trusts. Based on reflection profiles analysis, the trust fault system offshore Montenegro is reveled, parallel to the coast and extending up to 15 kilometers from the offshore line. Then, the system of normal top carbonate fault planes is mapped and characterized on the southern Adriatic, with NE trending.

The tectonic interpretation of the seismic reflection profiles in Montenegro point toward the existence of principally reverse tectonic forms in the carbonate sediments, covered by young Quaternary sandy sediments of thickness 1-3 kilometers. Also, reflective seismic data indicate the active uplifting of evaporite dome on about 10 kilometers of coastline.