



## **Evaporites in Montenegro and their role in seismotectonics**

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The evaporites which consisting of rock salt, anhydrite, gypsum and other salt minerals are widespread in Croatia, Albania and Greece, but the occurrence and distribution of evaporites onshore and offshore Montenegro, have not been yet the subject of special study.

Within Southern External Dinarides, onshore Montenegro, anhydrites have been penetrated in deep exploration wells and paleontologically proven on two stratigraphic layers: Lower Triassic, with a thickness up to about 100 meters and Upper Cretaceous (Cenomanian-Turonian) in several layers, in the total thickness of up to about 1200 meters, while in the southern Adriatic, offshore Montenegro, evaporites are indentified in deep exploration wells in Miocene (Messinian) layer, with a thickness of about 700 meters.

Interpretation results of existing 2D/3D seismic reflection surveys (3.500 km of 2D and 311 sqkm of 3D seismic profiles) and four deep exploration wells drilled offshore Montenegro on depth up to 5.3 km, proved widely distributed Messinan evaporites. The most spectacular example is the evaporite dome structure visible on the numerous reflection profiles, where the evaporites have developed into a complex shape that has been extruded near surface. The 2D/3D reflective seismic data indicated the process of intense uplifting of evaporite dome that have intruded into the younger sediments in upper layers through the thrust zone on about 10 kilometers off coastline.

The presence of the evaporites and their lateral extent is mapped by the seismicity distribution. The dominant role of evaporite dome in recent seismotectonic processes responsible for the genesis of a devastating earthquake in 1979, with a magnitude ML7.0 offshore Montenegro is sugested.

This paper synthesizes interpretation results of seismic reflection surveys and drilled wells in the form of the upper boundary distribution of evaporite layer offshore Montenegro.