

Earthquake on December 12, 2020 in the Anapa zone with $M_w=3.8$, $I_0=4-5$

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Abstract The article presents instrumental and macroseismic data on the earthquake on 12.12.2020 at 14:54 with $M_w=3.8$, $h=30$ km. The epicenter and parameters of the earthquake were determined using instrumental data from the network of regional seismic stations in the western zone of the North Caucasus of the EGS RAS. This earthquake occurred in the shelf zone of the Eastern Black Sea coast near the resort town of Anapa, in the Anapa seismically active area. This area tectonically is the conjunction of the northern side of the Tuapse trough and the thrust front of the Greater Caucasus. The focal mechanism for the earthquake was calculated. The solution of the focal mechanism was obtained from the polarization in P-waves at 29 seismic stations. From the focal follows the type of source up thrust-thrust movement. The GS RAS organized a macroseismic survey in the Anapa and Novorossiysk regions on the “VKontakte” social network a day after the earthquake. According to the results of the study, 144 respondents in 15 settlements in 7 days were interviewing. The maximum observed intensity was $I=4-5$ points in Su-Psekh and Varvarovka according to the results of the macroseismic survey, a map of the distribution of intensity points was create. The SEISAN software package calculated the spectral parameters of the source: seismic moment, corner frequency, spectral density level and spectral magnitude M_w .

Keywords earthquake, Anapa seismically active zone, seismicity of the North Caucasus, macroseismic effect, spectral parameters of the source, focal mechanism.

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