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Time-clustering analysis of seismicity of the oil and gas deposits area through Absheron-Prebalkhan tectonic structure (Azerbaijan)

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The temporal seismicity distribution in the seismogenic area of Absheron-Prebalkhan was investigated at different time scales using historic and instrumental earthquake catalogue either obtained from the literature or database of both worldwide and in-country seismic services. We observed temporal clustering of seismicity in the Absheron-Prebalkhan region, performing the Allan factor analysis on the seismicity of that seismogenic zone of Azerbaijan. A study aimed at finding clusters of earthquakes in the time dynamics of the seismicity of Absheron-Prebalkhan region in the Caspian Sea. The timespan of the catalog is from 1842 to 2015 and the magnitude of the events ranges from 2.5 to 6.8. The Gutenberg-Richter analysis indicates 4.0 as the completeness magnitude of the catalog. The methods have revealed the presence of time-clustering behavior in the time dynamics of large events in the Absheron-Prebalkhan region. Our findings suggest a non-Poissonian behavior of the seismicity of the investigated area, could contribute to a deeper knowledge of the time dynamics of the seismicity and to a better assessment of the relative seismic hazard.