Global Seismic Activity and its Relation to Solar Activity

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Based on data for the ancient earthquakes in the Mediterranean region, it is shown that the long-term variations of the seismic activity are related to the secular solar cycle. In the 11-year solar cycle, a well expressed maximum in the number of strong (M*7) earthquakes worldwide in the 20th century is found in the solar activity maximum, and a secondary one - on the descending branch of solar activity cycle coinciding with the period of the maximum of coronal holes - sources of high speed solar wind. In an attempt to identify the solar activity elements related to earthquake occurrence, the diurnal variations of the number of earthquakes are studied with respect to the days of arrival of high speed streams and coronal mass ejections. The possible mechanisms of solar activity influences on seismic activity are also discussed.

Keywords: solar activity; seismic activity; space weather.