Diurnal seismicity and temperature

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Global earthquake catalog data are systematically examined to see its variation with local time. It is observed that the occurrences of earthquakes are more during the night than during the day. The earth count goes down during the day and it is minimum in the afternoon at 15 – 16 hours and then steadily goes up till midnight. This typical signature of the diurnal seismicity seems to be consistent for the global earthquake data for different period, seasons, longitudes and depths. The sagging of the earthquake counts during the day, reduces for latitudes away from the equators. It is seen that this diurnal seismicity plot obtained for large number of earthquakes is modulated by the inverse of diurnal temperature plot for any place close to the equator.

Keywords: Diurnal seismicity, diurnal temperature plot, EM emission, earthquake trigger, LT index.

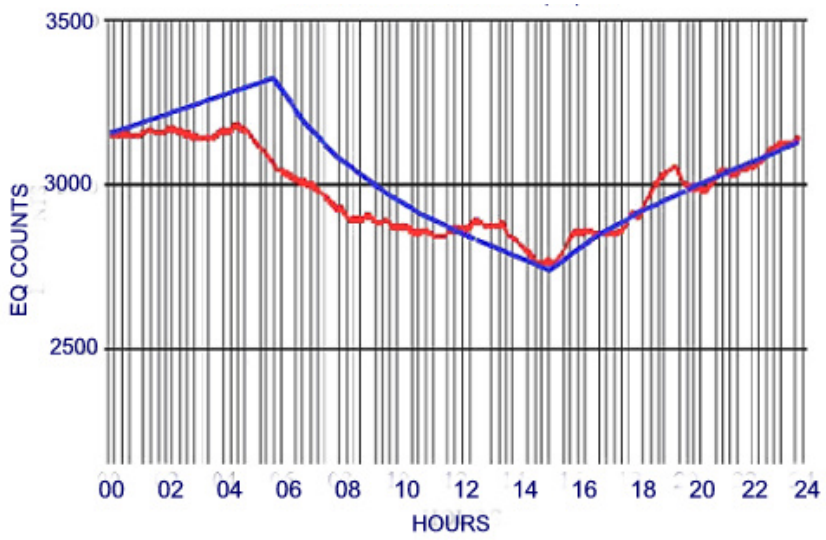

Fig.1. Comparison of diurnal seismicity plot (DSP- red trace) for world earthquakes [period 1973-2008, for total 2,86,474 events] with the inverse diurnal temperature plot (DTP- blue trace).