



Quasi-periodic traveling waves of large-scale Earth's global seismicity

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Using the global Centroid Moment Tensor catalog of earthquakes, the statistical properties of a coarse-grained spatio-temporal field, describing the Earth's global seismicity, have been investigated. A large-scale pattern, in the form of quasi-periodic traveling waves, has been recognized. This can be heuristically viewed as a westward continuous migration of seismicity on Earth, a coherent phenomenon on time scales of the order of few years. The above migration corresponds to a global phenomenon of stress transfer along the main faults, probably due to the global westward delay of the lithosphere with respect to the mantle. The average speed of the traveling wave is about $V_s \sim 100 \div 250$ Km/yr, corresponding to a period of few hundred years in which the stress shifts around the whole Earth.