



Earth's Microseismic Background and its Correlation with the Gravity Waves Velocity

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We assume, the gravity waves excite Earth's microseismic background. Peaks of the background spectrum can be observed if the wave length λ is comparable with the distance L between Earth and some cosmic gravity object. Such resonance peaks were observed in Sebastopol (Crimea), using laser interferometer and spectra analyser SK4-72 that enlarges periodical signal component relative chaotic one. The peaks were found for the frequency 2.3, 1.0, 0.9, 0.6, 0.4, 0.2 Hz. And there exist massive gravity objects at 1.3, 2.7, 3.5, 5.0, 8.0 and 11.0 parsecs distances (nearest and brightest stars). All these distances correspond to the detected peaks in accordance with $\nu = C/\lambda$ ($\lambda/2 \sim L$ due to resonance) if the gravity velocity C has the value nine orders of magnitude higher than the light velocity. If this conclusion is not casual it is possible to observe resonance peaks corresponding to the gravity waves resonance for the Earth and the Moon (~ 240 MHz), Sun (~ 0.6 MHz), Venus (0.3-2.2 MHz), Jupiter (100-150 kHz), Saturn (58-72 kHz). Moreover the peak, corresponding to Venus, Jupiter or Saturn should change its frequency during orbital motion. Such correlation could support decisively the present result. The obtained results are supported theoretically by Laplace's result concerning the lower limit of the gravity wave velocity [Laplace, 1805] and by the elastic model of the physical vacuum (EMPV) [Dubrovskiy, 1985; Dubrovskiy, Smirnov, 2003].

The huge gravity-wave velocity means that we are living in a practically static gravitational field, which is the basic assumption for the modern celestial mechanics. This point of view helps to a better understanding of the problems of Universe structure

and its evolution, as the interaction time between the parts of the Universe is considerably less than its lifetime i.e. all components of the Universe are causally connected. The existence of the proposed gravity velocity violates relativistic invariance. But according to EMPV only electromagnetic phenomena or only gravity phenomena are connected with proper relativistic 4-D vector for corresponding velocities of the electromagnetic or gravity waves. In general when both electromagnetism and gravitation take place violation of the relativistic invariance causes changes of constants (for example electric charge or equivalence principle) only in the eighteenth decimal. EMPV equations represent some composition of the Maxwell type and acoustic type equations with different wave velocities. These equations explain also such a fundamental fact that charges with the same sign repulse each other for electrodynamics field and attract each other for a gravity field.

The frequency ranges we discussed above are out of the ranges in the two major experiments: Virgo and Lisa, which were aimed at detecting gravity waves. The Virgo's range is free of discussed resonant frequencies as it corresponds to distances less than 1 parsec from the solar system, where there are no massive objects. Lisa will detect the gravitational waves within the frequency band 10^{-1} and 10^{-4} Hz, which corresponds to resonant distances exceeding 30 parsec, where there are too many massive objects to make resonant frequencies distinguishable. The source of the gravity waves with different frequencies in Universe may be the gravity waves exchange between gravity-connected objects and gravity (Jeans's) instability of the cosmic clouds, which leads to the stars formation process. This process must be preceded by the intensive gravity waves emission its spectrum being continuously shifted in the low frequency range on clouds approaching the instability threshold. Consequently we can state that the gravity waves with different frequencies are present in the Universe always as the stars creation process is permanent.