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GEOCOSMIC GENERAL PLANETARY VEHICLE FOR NEAR SPACE INDUSTRIALIZATION

Abstract

Day by day humanity is faced with a rising number of environmental problems, our continued existence depends on. The authors propose a solution described in the uSpace program: space is the main vector of further industrial development. Its implementation requires a unique transport. The authors proposed the design of a general planetary vehicle (GPV), which in appearance is a torus with an equatorial diameter and a cross section of several meters. The estimated mass of this geospace flying machine is 30 million tons. Reaching the outer space happens by the increasing in the diameter of the ring and reaching the calculated altitude (with passengers and cargo) the peripheral velocity of the body, which should be equal to the first cosmic velocity up to 10–12 km/s. The design includes a system of power limiting magnets, a system of stabilizing emissions and a linear electric motor, the issuance of acceleration of flywheels, as well as power take-off in the process of admitting GPV. At the same time, the position of the center of mass of the GPV does not change in the elevation process and it always coincides with the planetary center of mass. GPV is designed to promote the industrialization of space by using its advantages: vacuum, extremely low and high temperatures, weightlessness, energy and raw materials. The industrialization of outer space means the emergence of a global cargo flow on geocosmic routes: between cosmic production facilities and terrestrial humanity as a collective consumer of products produced in near space. According to our calculations, the cost of such transportation using GPV will be several thousand times lower than the cost of current transportation, about $ 1,000 per ton of cargo delivered to space or back. The results of the conducted studies and their analysis demonstrate that GPV is able to provide a planetary scale and a rapid pace of practical implementation of the uSpace program. Keywords: he interaction of space with society, Space Engineering and Construction, Space structures Emerging space ecosystems, General Planetary Vehicle, high-speed linear motor, magnetic levitation, magnetic suspension, uSpace.