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CENTRIFUGAL LASER SPACE SOLAR POWER PLANTS: DESIGN PROSPECTS AND IMPLEMENTATION FEATURES

Abstract

The exhaustion of hydrocarbons in the nearest historical prospective requires rational solutions related with alternative energy sources providing the lowest possible cost and simple construction, the convenience of ground-based testing and operation, the availability of components and the corresponding scientific and technical potential. Regarding this, centrifugal fiber lasers can be of great interest for creating prospective space solar power plants. Frameless centrifugal structures differ favorably from their frame analogues; it allows reducing the cost of their creation and ensuring efficient transportation to the orbit. The design prospects of a laser centrifugal space solar power plants, as well as the features of their practical implementation are described. In particular, an analysis of deployment dynamic of such space power plants, its stability and position reorientation are given. There are proposals on the principal constructive appearance of a centrifugal laser space power plant.