

SPACE PROPULSION SYMPOSIUM (C4)
Joint Session on Nuclear Propulsion and Power (7-C3.5)

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PROSPECTS OF THE USE OF EXTERNAL MAGNETIC FIELD INTERACTION EFFECTS
DURING LONG-TERM SPACE MISSIONS PROSPECTS OF THE USE OF EXTERNAL MAGNETIC
FIELD INTERACTION EFFECTS DURING LONG-TERM SPACE MISSIONS

Abstract

The paper presents the research materials on interaction between space modules (SM) elements and the external magnetic field. The paper by the authors, presented at Congress IAC-12, shows the possibility of reduction in the necessary reserve of the onboard propulsive mass using propulsive force of interaction between magnetic field and SM elements, which carry electrical current. This paper shows rational fields of application of the external magnetic field interaction effects for two options: - motion of SM in the ionized magnetic environment; - motion of SM in the unionized magnetic environment. The paper gives technical configuration of the space module for space debris disposal beyond the near-Earth space. The module is fitted with the onboard nuclear energy source. The processes of this module functioning in the ionized near-Earth space are under consideration taking into account the external magnetic field interaction. The paper presents technical configuration of the space module for radioactive waste disposal beyond the terrestrial biosphere. Flight of this module provides trajectory legs in the magnetic field with the absence of the environment ionization.