
On the corrections of space station and satellite orbits by solar electric rocket thruster

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Dimensions, mass, and electric power output of the International Space Station (ISS) are given. Assembly stages on the orbit of such a heavy satellite are considered. It is shown that the power of the on-board solar batteries is enough to supply the solar electric rocket thruster (SERT), which is available to correct the ISS orbit. Nevertheless, for rapid and accurate orbit correction of the massive ISS now liquid-propellant rockets consuming tens tons of propellant are used instead of long-acting light in weight SERT. It is shown by an example that a satellite with smaller mass can be held on a minimal orbit using SERT; equations to determine minimal SERT satellite orbit are given.

Keywords: *satellite, International Space Station (ISS), electric rocket thruster, solar battery, solar electric rocket thruster (SERT), minimal satellite orbit.*

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