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RESEARCH ON REPEATABLE LOCKING MECHANISM FOR SPACE SOLAR ARRAY

Abstract

With the development of spacecraft technology, the retractable and reusable ability of solar array mechanism is extremely urgent. As the core technology to actualize the solar array retracting and reusing the repeatable locking technology was studied in this paper. A repeatable locking active mechanism composed of worm gear and screw and lock hook was proposed. As the solar array folding stiffness be the optimization target, the layout of the locking mechanism had been optimized through finite element analysis. The result validated the feasibility and rationality of the design scheme.