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ANALYSIS ON POWER SYSTEM DESIGN FOR DEEP SPACE PROBE

Abstract

With the development of space technology, and needs of human development, deep space exploration has become more and more frequently. The deep space probe has become an important direction of study and played an important role in deep space exploration. The power system is a vital subsystem in the satellite system, which keeps the whole system working normally. According to the specific characteristics of deep space exploration, the factors influencing the power system design and analyzed, such as space environment, designated flight schedule, load power requirement, power system topology selection, power system self-management, light weight and scale design. A method is provided for high specific energy, high specific power and high autonomous management power system design and analysis for deep space probe. The method can not only be a basis for the optimization design of specific orbiting probe power system, but also be used as a reference for the power system design of other deep space probes.