Exploration of Near-Earth Asteroids (4)
Exploration of Near-Earth Asteroids (2) (2)

Author: Mr. Meng Wang
Lanzhou Institute of Physics, China, nestam@163.com

THE SELECTION STRATEGY STUDY OF ELECTRIC PROPULSION OF CHINESE FUTURE ROBOTIC ASTEROID EXPLORATION MISSION

Abstract

Robotic asteroid exploring has become an international trend in the current and future for a long time. Whether for a probe or an orbiting space station, using electric propulsion to accomplish orbit transferring and station keeping mission has become a clear trend of the future space exploration technology. Though there is still some gap between Chinese current electric propulsion technology and the international advanced level, but China also has urgent application requirements Therefore, how to construct feasible spacecraft platform based on the existing and visible technology, and to clarify Chinese future propulsion choice on robotic asteroid exploration has become the most urgent problem for Chinese Robotic asteroid exploration. In this paper, by analyzing the integration mode and selection strategy of foreign asteroid probe which using electric propulsion system, we study the method of system analysis and reference for electric propulsion products in China , mainly ion thruster and hall thruster to compare a variety of potential available electric thruster type, selection strategy. And on this basis, give the optimal type of electric propulsion system and the main technical parameters, such as power thrust specific impulse efficiency layout, etc.