

Poster Session (P)

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## DEVELOPMENT OF THE SPACE ROBOTS IN THE SPACE FLIGHTS

### Abstract

This paper introduces the development of the space robots in the space flights. We hope to break through the weight and outline restriction of the rocket by using the on-orbit assembly technique with space mobile manipulators, in order to satisfy the need of large space facilities in the future space mission; on the other hand the space robot on-orbit service system should be built to recycle the bad spacecraft and this orbital succor and life extension of old spacecraft. Both side need to research the space robot with the dexterous operation ability and fast steady mobile ability, to support even replace the astronaut performances in space missions. Three typical space robots are investigated in this paper: space manipulators, space legged robots and space integrated arm-leg robots, according to the complication degree, then the key techniques of the space robots are introduced respectively, which include: system design, control, path planning, object identification, human-machine interaction and energy-saving operation. The development of the space robots will have great impact on design and operation of spacecraft in the future spacecraft.