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DESIGN AND PRACTICE OF ERGONOMICS IN TIANGONG-2 MAN-MACHINE COOPERATION ON-ORBIT SERVICING TECHNOLOGY EXPERIMENT

Abstract

This paper introduced the contents of Tiangong-2 Man-Machine Cooperation On-orbit Servicing (MMCOS) technology experiment. According to operational requirements of the experiment mission to astronauts, ergonomic requirements system was proposed. Based on the system, ergonomic design of Manipulator Operating Terminal (MOT) system was carried out. Single-machine-level and system-level evaluation experiments of the design results were performed to study the adaptability of MOT system to astronauts and effectiveness of ergonomic measure. During Tiangong-2 space mission, the successful implementation of MMCOS technology experiment verified the integrity and correctness of the ergonomic design. Finally, the research focus of the ergonomics in MMCOS technology during China space station phase was put forward.