

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Life Support and EVA Systems (6)

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OXYGEN CONCENTRATION CONTROL IN EXTRAVEHICULAR ACTIVITY(EVA) OF MANNED
SPACECRAFT

Abstract

Oxygen concentration control in extra-vehicular activity is an important factor to ensure the safety of astronauts and achieve the extra-vehicular task. The oxygen concentration control plan and verification tests were present in current paper. The oxygen concentration change factors were analyzed. A model was built to simulate the index and tendency of oxygen concentration change. The relative calculation and analysis were finished. The oxygen concentration control plan and processes were designed. The safe oxygen concentration was obtained by drawing high oxygen concentration curve at low pressure. The oxygen concentration control methods and projects were proposed and the possible effluences caused by the adaption of control methods were also analyzed. Specific verifiable tests were arranged. The combustibility test of nonmetal materials in vehicle and the verification tests of processes were carried out. The result indicates that the oxygen concentration control plan is correct.