

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Poster Session (P)

Author: Prof. Wang Chunhui
China, chunhui_89@yahoo.com.cn

ERGONOMIC DESIGN OF THE DISPLAY INTERFACE FOR MANUALLY CONTROLLED
RENDEZVOUS AND DOCKING**Abstract**

Manually Controlled Rendezvous and Docking (RVD) is a complex and demanding task for astronauts. Design quality of the display interface is one of the key factors that influences astronauts' performance in RVD tasks. In this paper, the methods employed and the experiments conducted for the ergonomic design of the display interface for RVD tasks were introduced. According to conventions, both video information and numerical information were displayed on the primary display interface. Principles such as "pictorial realism", "compatible motion" and "bunch effect" were considered in the design of the video display and the numerical display. Eye movement experiments were then designed and conducted; the eye fixation data provide useful instructions for arranging the layout of the video information and numerical information. Ergonomic experiments were also carried out to compare designs of the crone-drone image display; parameters of the elements in the crone-drone image, such as the backgroup pattern, the size of the crone-drone were selected accordingly. The overall display interface which we designed demonstrated satisfying qualities, and supported successfully the first manually controlled RVD task in China's SZ-9 mission.