

IAF MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Late Breaking abstracts (LBA) (LBA)

Author: Ms. Sanmathi Priya Abiram Lakshmi Devi
Cornell University, United States

EFFECTS OF MICROGRAVITY ON ASTRONAUTS' OPERATION PERFORMANCE AND SPATIAL
AWARENESS

Abstract

This research explores the effects of microgravity on spatial awareness and distortion invection among astronauts. The scientific goals include examining astronauts' responses, vestibular system functioning, and situational awareness in microgravity. Data was collected by operating different tools and conducting tasks throughout multiple parabolic flights to examine how spatial awareness and distortion affect different parts of an astronaut's body. Both qualitative and quantitative data were analyzed to understand how microgravity impacts astronauts' ability to judge spatial relationships and manipulate tools accurately. As we continue to open the space program to commercial flight this research collaborates with the ongoing research for professional astronauts in space and how they can overcomevection and information on the soon to be civilian participants conducting everyday tasks in space as they do on Earth. The broader significance of the experiment for astronaut training and the encouragement of diversity in STEM fields is emphasized.