

SPACE LIFE SCIENCES SYMPOSIUM (A1)  
Interactive Presentations (IP)

Author: Mr. Nick Salamon  
The Ohio State University College of Engineering, United States

Mr. Jonathan Grimm  
The Ohio State University College of Engineering, United States

Dr. John M. Horack  
The Ohio State University College of Engineering, United States

Dr. Elizabeth Newton  
The Ohio State University, United States

APPLICATION OF VIRTUAL REALITY FOR CREW MENTAL HEALTH IN  
EXTENDED-DURATION SPACE MISSIONS**Abstract**

Human exploration of the solar system brings a host of environmental and engineering challenges. Among the most important factors in crew health and human performance is the maintenance of sustained mental health. The mental well-being of astronaut crews is a significant issue facing the sustainability and success of long-duration space missions, such as spending a long period of time on the Moon, Mars exploration, and/or eventual colonization of the solar system. If mental health is not properly addressed, these missions will be at risk. In this paper, we examine the uses of immersive virtual reality simulations in order to maintain healthy mental states in astronaut crews who are removed from the essential comforts typically associated with terrestrial life. Various methods of simulations and their administration are analyzed in the context of current research and knowledge in the field of psychology, with a specific focus on the environment faced by astronauts on long-term missions. The results of this investigation show that virtual reality should be considered an effective measure in the prevention of mental state deterioration in astronauts.