

The Psychology of Space Exploration and Extreme Environments

Saturday, September 13, 2025 3:30 PM (1h 30m)

Motivated by the need to support crews on future long-duration space missions, psychological research on extreme environments has significantly increased over the last decade, examining how prolonged isolation affects health, well-being, cognition, and emotion. However, the broader effects on psychological adaptation processes remain unclear.

This symposium presents a multidisciplinary set of recent empirical investigations examining psychological and cognitive adaptation to spaceflight hazards using ground-based analogs. These serve as models to investigate key stressors individuals will face during future space operations.

Isolation and confinement are among the most significant psychosocial challenges of spaceflight. Pierpaolo Zivi will present the findings obtained in studies conducted at the Antarctic Concordia research station and in a closed habitat simulation, investigating their effect on decision-making and stress. Other potential analogs to explore the psychological impact of prolonged isolation are currently also being tested. In this regard, Claudio Zavattaro will present findings and insights from a recent solo sailing study.

Operating in extreme environments may require dealing with fatigue, disrupted sleep, and hypoxia. Relatedly, Sara Spinabelli will present recent results regarding cognitive fatigue in alpine soldiers during military training at high altitudes.

Another pivotal spaceflight hazard is microgravity, which can be investigated through parabolic flights and other models of microgravity. Raffaella Ricci presents results using these approaches, providing valuable insight into the effects of weightlessness on cognition.

By integrating insights from different approaches, this symposium offers a cutting-edge view of the recent advances in psychological research in spaceflight and extreme environments, highlighting research gaps and future directions.

If you're submitting a symposium talk, what's the symposium title?

If you're submitting a symposium, or a talk that is part of a symposium, is this a junior symposium?

No

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Session Classification: The Psychology of Space Exploration and Extreme Environments