

SPACE LIFE SCIENCES SYMPOSIUM (A1)
Behaviour, Performance and Psychosocial Issues in Space (1)

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INFLIGHT COGNITIVE PERFORMANCE MONITORING: A REVIEW OF THE METHODS AND
TOOLS, AND AN INTRODUCTION TO A CASE STUDY**Abstract**

“Mismatch between Crew Cognitive Capabilities and Task Demands” is listed by the National Aeronautics and Space Administration (NASA) as a major risk that astronauts may encounter in space. Inadequate task design or interface design, the decline of human cognitive capabilities in space, are all possible causes of “Mismatch between Crew Cognitive Capabilities and Task Demands”. So NASA and other space agents have developed several tools with which to monitor the cognitive performance of astronauts in space. Current study first reviewed the methods and tools used for inflight cognitive performance monitoring, and then introduced the results of one cognitive test (three-dimensional mental rotation test) performed among the flight crew of China’s SZ-9 mission. By reviewing the literatures in the area of inflight cognitive performance monitoring, several problems were summarized, such as the practice effect and the small sample size; corresponding solutions were also proposed in this paper. By analyzing the test data of the flight crew of China’s SZ-9 mission, we deduced that the in-flight conditions may have a negative impact on the mental rotation performance of the astronauts in the first several days in space, when adaptation to the space environment is taking place.