MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Sciences Onboard the International Space Station and Beyond - Part 1 (6)

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FLUID SCIENCE LABORATORY ON BOARD ISS: FASES EXPERIMENT OPERATIONS AND RESULTS

Abstract

FSL is a multi-user facility laboratory for conducting fluid physics research in microgravity conditions. It can be operated in fully- or in semi-automatic mode and can be controlled on board by the ISS Astronauts, or from ground MARS control center. This laboratory allows scientist to execute fluid dynamic experiments using complex optical diagnostics. This paper reports on operations carried out during the ISS Increment 35-36 and 37-38, to support the FASES experiment, providing reader with considerations on how the operations are planned and then executed on a 24 hour basis, on how the amount of data generated are downlinked to ground and then correlated and processed so to allow the science team to plan runs on a weekly basis. Details about FASES Experiment Procedures (EPs) running autonomously on the FSL master Control Unit are illustrated ; the interaction between MARS USOC ground team and the Science Team located at their User Home Basis (UHB) is also provided. An overall screening of FASES preliminary scientific results is illustrated eventually.