

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Microgravity Experiments from Sub-Orbital to Orbital Platforms (3)

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ASPECTS OF RISK OF MANAGEMENT IN BRAZILIAN MICROGRAVITY EXPERIMENTS: A
CASE STUDY.**Abstract**

Learning is a process strengthened by the praxis. The subject of the present article is to verify possible methodologies to mitigate risks in aerospace projects regarding such specific cases as new developments for future microgravity missions at Centro Universitario FEI (FEI). The base of this study is the knowledge and experience acquired in projects in some microgravity missions in which FEI participated. FEI has been present right from the beginning of the Microgravity Program of the Brazilian Space Agency (AEB) in 2002 (Cumã Mission), developing microgravity experiments for national sounding rockets and the International Space Station (ISS). As a matter of fact, its involvement in the aerospace field is previous to the AEB Microgravity Program, and started when they sent experiments on the space shuttle STS-107 (Columbia mission, 2003), and also on the sounding rocket missions São Marcos (1999) and Lençóis Maranhenses (2000). From mission to mission different scenarios appeared to the project management, popping up new barriers to overcome and bringing back old ones to the present: a set of occurrences in a comprehensive amount of uncertainties that face the manager skills to deal with. The main idea of this paper is about the study of some techniques used to increase the success rate by implementing a risk management project with the evaluation of possible methodologies for risk mitigation projects, proposing recommendations related to the management of aerospace projects based primarily on theory, and then on known and successful practices adopted in projects already completed. A fundamental step for the risk comprehension is to identify the sources of uncertainties and deleterious consequences, or, in other words, the risk factors. The identification of common risk factors is investigated in bibliography, by surveys and by the use of a DELPHY methodology in order to validate the factors identified as significant risk sources and their root causes, including, in addition, the point of view of some other expert managers. This article is a particular case study of a broader survey that is being elaborated in the dissertation one of the authors', at the National Institute for Space Research, at São José dos Campos, Brazil.