

MICROGRAVITY SCIENCES AND PROCESSES SYMPOSIUM (A2)
Facilities and Operations of Microgravity Experiments (5)

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LOW-COST SOUNDING ROCKET FOR STUDENTS BY STUDENTS

Abstract

The Laboratory for Space and Microgravity Research (LEEM) is a national Spanish non-profit organization made up of students from eleven Spanish universities and young professionals.

This NPO helps and gives support to students and enthusiasts wishing to start a microgravity or space related projects.

To achieve this aim, LEEM through its network and student cooperation has developed a **low-cost sounding rocket** with which students of thesis, small educational organizations and related students associations can test their experiments about atmospheric research or subsystems for microsattellites without the need of investing too much money.

This low-cost sounding rocket, called **SSR-100**, is product of approximately two years of work and it has involved almost 20 students, who finally have developed a single-solid-stage vehicle capable of carrying a payload with mass up to 10 kg during at least 60 seconds of ballistics flight above 6 km.

The main objective in the short term is to improve this rocket in order to develop a very approachable microgravity platform, giving enough microgravity time to test the onboard experiments. It will provide a quick and soft recovery using a parachute allowing re-fly the experiments, and all of this, with a low cost price.

This paper will analyze the progress which has been done during these years, the conclusions of the development of this project, as well as the impact in the educational community due to the apparition of a low-cost microgravity platform. It will also present the viability to export it to other related organizations, creating this way a worldwide network of low-cost sounding rockets available for educational purposes.