

IAF SPACE EDUCATION AND OUTREACH SYMPOSIUM (E1)
On Track - Undergraduate Space Education (3)

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UNCONVENTIONAL TOOLS FOR SPACE EDUCATION IN THE PORTUGUESE ECOSYSTEM

Abstract

The Portuguese Space Agency – Portugal Space’s main goal is to implement the country’s space strategy, which defines several priorities that include attracting and growing a highly skilled workforce, fostering international cooperation, promoting interdisciplinarity to create a flexible and adaptable mindset, and education on Science, Technology, Engineering, and Mathematics – STEM. To nurture the sustainable growth of the national space ecosystem, Portugal Space promotes a set of unconventional, dynamic and practical activities available to the national and international student community. In this paper we present and discuss two on-going educational initiatives. The Zero-G Portugal initiative intends to bring space closer to high-school students by allowing them to experience the sensation of floating in space even if just for a few seconds, while also learning about the physics and applications of microgravity. It is further expected to evolve this activity to research flights, where university students can perform their previously planned experiments in a microgravity environment, allowing to explore science in a more practical manner and create enthusiasm for space while actively learning. Portugal Space also promotes the European Rocketry Challenge – EuRoC, that seeks to stimulate university students to fly sounding rockets, by designing and building the rockets themselves. Such competitions stimulate innovation and motivate students to extend themselves beyond the classroom, while learning to work as a team. The growth of EuRoC within Europe is visible, with an increasing number of teams applying and raising already worldwide interest. From 6 teams and 100 students in its first edition, to a second edition with 20 teams selected from 34 applications received, totalling around 400 students, with the first Portuguese team making their debut. For the third edition, a pre-EuRoC course, promoted in cooperation with the Technical University of Munich, has been established to provide students relevant scientific and engineering knowledge. The interest in the competition keeps growing considering the 700 students from 34 countries worldwide that attended this pre-course. From all over Portugal, students from more than 20 higher education institutions have participated, reflecting the national interest in space-related engineering courses, along with different aerospace engineering degrees opening in national universities. Initiatives like the ones described in this paper attract students’ attention and are well-suited tools for educational purposes. Although current enthusiasm is reflected in the number of participants, a long-term analysis will allow us to understand the real impact these have in the space ecosystem as a whole.