

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

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OPPORTUNITIES FOR MICROGRAVITY AND HYPERGRAVITY EXPERIMENTS UNDER THE
UNITED NATIONS ACCESS TO SPACE FOR ALL INITIATIVE: ACHIEVEMENTS IN 2020-2021

Abstract

The United Nations Office for Outer Space Affairs (UNOOSA) promotes international cooperation in the peaceful uses and exploration of space and in the utilization of space science and technology for sustainable socioeconomic development. UNOOSA's Access to Space 4 All Initiative, developed to accelerate and modernize capacity-building efforts, provides tracks that offer gradual learning steps helping participants develop capabilities in a sustainable and responsible manner. There are currently three tracks each offering a variable number of hands-on opportunities under an overarching theme:

- Hypergravity/Microgravity Track: designed with the end goal of developing the capacity of running space experiments onboard orbital vehicles or space stations.
- Satellite Development Track: aiming at building the capacity to design, implement, verify, operate and decommission a satellite in a responsible and sustainable manner.
- Exploration Track: designed to cover aspects related to space exploration beyond the geostationary orbit.

The Hypergravity and Microgravity track currently encompasses cooperative ventures with Airbus S.A.S, the Center of Applied Space Technologies and Microgravity (ZARM), China Manned Space Agency (CMS), the European Space Agency (ESA), the German Aerospace Center Space Administration (DLR) and Sierra Nevada Corporation. This track contains both ground based and orbital opportunities with the aim to start building initial capabilities/skills/capacity on the ground and gradually attain capabilities for more complex experiments through orbital opportunities. This paper will provide an update of the activities and experiments carried out under the Hypergravity/Microgravity Track during 2020-2021 together with information on the new opportunities available and future prospects.

Partnerships are a distinctive feature of the Access to Space for All. The Initiative is supported by governmental, intergovernmental and commercial stakeholders, who are providing access to state-of-the-art facilities and infrastructure to support the development of technical and scientific capabilities in the different tracks. UNOOSA is working on establishing new partnerships to cover some of the gaps identified

in the Initiative and expand its portfolio. UNOOSA is actively working on expanding its portfolio of activities and is searching for more partners to cover some of the identified gaps in the Initiative.