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 2019-2020

Abstract

The United Nations Office for Outer Space Affairs (UNOOSA) launched the Access to Space for All Initiative in 2018 providing opportunities and space science data services. Under the Initiative, UNOOSA has been collaborating with space-faring governmental, intergovernmental and private sector entities to open ground- and space-based facilities to all Member States of the United Nations for micro- and hypergravity experiments, space missions, and human spaceflight activities. These facilities currently involve the China Space Station, the Bartolomeo platform on the International Space Station, the Dream Chaser, the Drop Tower, and the Large Diameter Centrifuge.

As its continuous efforts, in 2019, UNOOSA worked closely with its partners and published the Announcement of Opportunities (AOs) for Member States to utilize the above facilities. At the time of submission of the present abstract, 10 experiment projects from applications in response to the AOs published in 2019 have been selected for execution on board the facilities. These include 9 experiments to be executed on board the China Space Station, scheduled to take place from 2022, and 1 experiment to be executed with the Drop Tower in Bremen, Germany, scheduled to take place in 2020.

The already selected projects involve 24 institutions from 17 Member States of the United Nations in Asia and the Pacific, Europe, Africa, North America and South America, including governmental organizations, private sector entities and international associations. Most projects are collaborative international efforts reflecting the amazing creativity and commitment of the involved scientists from public and private entities in both developing and developed countries. The research areas involve space life science, biotechnology, microgravity fluid physics, microgravity combustion, astronomy and space technologies.

More experiments associated with other facilities will be selected from applications after the respective submission deadlines in 2020. All the achievements, benefits in providing access to space, lessons learnt, next opportunities and measures being undertaken to improve quality and quantity of applications will be presented and shared with the event participants.