



Release No. 16  
Mexico City, March 24th, 2024

## **IPN to launch first flight from Antarctica to the stratosphere with NASA**

- **The mission will take place between December and January from McMurdo Base, located at the terrestrial South Pole, aboard super-pressure balloons.**
- **It is expected that the trajectory will be equivalent to a circumnavigation of Earth, aiming to identify the presence of pollutants through image capture and variable measurement.**

By invitation of the National Aeronautics and Space Administration (NASA) and the National Science Foundation (NSF) of the United States, the Instituto Politécnico Nacional (IPN) will participate for the first time in history in a suborbital mission to the stratosphere from Antarctica with the EMIDSS-6 module (Experimental Module for the Iterative Design for Satellite Subsystems version 6).

The mission is expected to take place in late December of this year and during January 2025. The flight will depart from the United States' McMurdo Base, located at the southern end of Ross Island —near New Zealand, at the South Pole—, which is operated by the United States Antarctic Program.

Mario Alberto Mendoza Bárcenas, researcher at the Aerospace Development Center (CDA) of IPN and project leader, explained that the special FY25 mission to Antarctica with the EMIDSS-6 will have a trajectory of one revolution in 15 days, equivalent to a circumnavigation of Earth, aboard super-pressure balloons (SPB) that allow reaching a high level of buoyancy.

One of the mission's objectives is the development of the first stage of instrumentation for the identification of pollutants, mainly microplastics in the stratosphere, through an image capture system of the environment related to altitude during the ascent of the platform to its maximum floating point.

He indicated that, since the polar vortex is a persistent high-pressure system that forms a unique atmospheric circulation pattern over Antarctica, it allows the balloon to maintain a constant altitude for a longer period of time.

Under these environmental conditions, the EMIDSS-6 module will be able to collect and store data for the development of graphics and to understand the



characterization of the stratospheric environment at low latitudes using Mexican aerospace technology.

Mendoza Bárcenas pointed out that the module will record environmental variables through sensors for measuring humidity, temperature, relative humidity, and ultraviolet radiation with commercial-grade devices.

In July next year, NASA experts will subject the EMIDSS-6 to strict technical and electromagnetic compatibility evaluations based on standards, so that by the end of the year, the payload will participate in the suborbital mission from Antarctica.

Finally, he informed that the mission's working team will be composed of experts from IPN, the Institute of Applied Sciences and Technology and the Institute of Engineering, both from the National Autonomous University of Mexico (UNAM), the Western Institute of Technology and Higher Studies (Iteso), and the Molina Center for Energy and the Environment (MCE2).

===000===

