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ARION 1 REUSABLE SOUNDING ROCKET: THE NEW MICROGRAVITY PLATFORM IN EUROPE

Abstract

During Q2 of 2019 the European sounding rocket, ARION 1 will have its maiden flight. ARION 1, a liquid-propelled sounding rocket that is being developed by PLD Space, will lift-off from the launch facilities that PLD Space has in the South of Spain, concretely in Huelva.

PLD Space, a Spanish start-up company stablished in 2011, has been focused during the last years in the development of liquid-propulsion rocket engines that will power their rockets. After having tested successfully the first reusable rocket engine in their facilities at the airport of Teruel, PLD Space is concentrating its efforts in finalising the entire ARION 1 sounding rocket.

ARION 1, the first-ever reusable sounding rocket in Europe, will be able to provide around 4-5 minutes of microgravity conditions after reaching an apogee of 150 km in a nominal mission. This sounding rocket, will have the capability of carrying up to 100 kg of payload, exposing the experiments, scientific and technological payloads to low accelerations due to the liquid-propulsion technologies.

With this paper, PLD Space wants to introduce the ARION 1 reusable sounding rocket, its capabilities as well as the advantages of a liquid-propelled based sounding rocket with respect to other traditional solid-based sounding rockets.

ARION 1 aims to be the sounding rocket reference in Europe, providing an affordable, flexible and simple microgravity platform to industry, space agencies, research centres and academia.