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FLIGHT THRUST MODULATION USING HYBRID PROPULSION SYSTEM

Abstract

Thrust modulation is a very interesting and promising possibility offered by hybrid propulsion. It gives the rocket, satellite or missile considerable flexibility and maneuverability. It can help to optimize a trajectory, adapting thrust as desired during the flight. It also is a way to improve engine performance.

The 24th of August 2011, the rocket of ISAE students (FRANCE) flew propelled by the ONERA engine with a modulation system. Thrust modulation worked, it is a first for a hybrid propulsion system with paraffin.

To realized this experience, three aspects were aborded: simulation, modulation valve designing and rocket building.