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PREDATOR (PRESSURE DEPENDENCY ON ALTITUDE VERIFICATOR) EXPERIMENT

Abstract

The presentation is aiming at introducing the latest findings of an ongoing experiment. The PREDATOR experiment aims at advancing the aircraft navigation systems by verification of a new pressure difference measurement method. PREDATOR is an experiment conducted by a student team consisting of undergraduate and graduate students from the Czech Technical University in Prague within the REXUS/BEXUS programme and is fully supported by the European Space Agency. Objective of the experiment is to verify a new measurement method using a specific arrangement of the pressure sensors in a very specific setting. That will be achieved by gathering measured data during the ascent and descent of the stratospheric balloon mounted on the gondola. Such method (and experimental setting) has a wide range of use for further improvement of current AHRS (Altitude Heading Reference System) in aircrafts and can improve their navigation systems. This has been proven by a serious interest of commercial subjects that are developing such systems. The method is based on a previous research at Czech Technical University and it has already been tested in conditions of a scientific laboratory, in a natural environment using UAV as well as small commercial aircraft and gathered measurement data so far suggest the validity of the method. Throughout the year 2016, further measurements will be conducted in order to gather more data and increase the relevance of the research. Such outcomes can be presented at IAC 2016. The final testing will be conducted during the BEXUS 23 campaign with other student experiments.