



AtmoCube: a nanosatellite project as an effective educational framework

Mauro Messerotti (1,2), Anna Gregorio (1,2), Alessandro Cuttin (3), Mario Fragiacomo (3), Sergio Carrato (3), and The AtmoCube Development Team ()

(1) INAF-Trieste Astronomical Observatory, Trieste, Italy (messerotti@oats.inaf.it, 0039 040 226630), (2) Department of Physics, University of Trieste, Trieste, Italy, (3) Department of Industrial and Information Engineering, University of Trieste, Trieste, Italy

AtmoCube is a low-cost one-unit CubeSat that has been designed and developed at the University of Trieste. Aimed at probing the near-Earth space environment via a set of scientific payloads like a GPS, a magnetometer and a radiation detector, AtmoCube is one of the nine CubeSat projects selected by the ESA Education Office to be launched cost-free by the Vega Maiden Flight. AtmoCube proved to be an effective mean for education both in the field of physics and in that of engineering, as physics and engineering students have been successfully involved in all stages of design and development. In fact, twenty-four theses relevant to various aspects of the project have been discussed during three academic years. Furthermore, the involvement of small enterprises has played a key role in creating a stimulating environment for the students that could benefit from the external expertise and facilities. In this work, we provide an overview of the project and its development status by focusing on the didactic aspects that have made it an invaluable framework both for teaching and for hands-on learning.