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The UV-Detector of the ATMOSUV-CanSat (Atmospheric Thunderstorms's Monitor Optical Signal & UV)

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The ATMOSUV-CanSat is a proposal of small instrument aimed to study the Optical and UV counterpart emission from upper atmosphere high-energy phenomena like TGF (Terrestrial Gamma-ray Flash) process. It could be used also as a complementary ground monitor facility in the study of thunderstorms at high altitude in the atmosphere. The main goal is to take complementary data to that of the MXGS/ASIM (Modular X-ray and Gamma-ray Sensor in the Atmosphere-Space Interactions Monitor) mission, taken from the ISS (International Space Station).

The detector is planed to be launch in a baloon during severe thunderstorms and take measurements of air conditions and to perform fast imaging with high temporal accuracy. We expect to measure UV emision, optical signal, temperature, presure, and accurate 3D location, with FPGA controlled high velocity imaging devices and sensors.

Here we present preliminary results of a prototype of the UV-Detector ATMOSUVCanSat. The prototype detector has been used for high-speed directional ultraviolet detection from controlled electrical discharges up to 1MV.