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# DMSAT-1 ATMOSPHERIC ENVIRONMENTAL APPLICATIONS FOR THE UNITED ARAB EMIRATES

**Abstract**

DMSAT-1 (Dubai Municipality Satellite) is the first environmental microsatellite for Dubai. DMSAT-1 is a collaboration between the Mohammed Bin Rashid Space Centre (MBRSC), Dubai Municipality and the Space Flight Laboratory (SFL). It is a high performance microsatellite designed to perform multi-spectral observations in the visible and near-infrared bands for aerosol and greenhouse gases monitoring. DMSAT-1 is equipped with three instruments that will provide significant data to be utilized for climate change and air pollution studies. The primary instrument on DMSAT-1 is a multi-spectral, dual polarization imager that will be imaging in Blue, Red and Near-Infrared bands at two polarization states (0 and 90 degree linear) to detect the aerosol (PM2.5 and PM10) content in the atmosphere. The two secondary instruments are spectrometers covering wavelengths from 1000nm to 2000nm to detect greenhouse gases (CO2, CH4, H2O) content in the atmosphere. DMSAT-1 is expected to be launched in Q1 of 2021. The main purpose of this presentation is to introduce the DMSAT-1 mission and its applications.