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Earth Observing Missions and Systems to Address Climate Change and Its Impacts [2] (3B)

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THE METHANESAT MISSION

Abstract

The MethaneSAT Mission

MethaneSAT is a unique mission designed to locate and measure methane from human sources worldwide to drive substantive emissions reductions by 2025. MethaneSAT will employ a cutting-edge two-channel imaging spectrometer to detect methane concentrations as low as two parts per billion and focus in on areas as small as 100 meters. It will cover a 200-kilometer-wide path observing at nadir, passing over target regions every few days. The mission will fill a gap between other planned and operational missions with the capability to measure areal methane fluxes as well as point source emissions.

The first satellite built and operated by a non-profit, the Environmental Defense Fund (EDF), MethaneSAT will target methane emissions from 80% of the worldwide oil and gas operations as well as agricultural sources, urban areas, and other targets. MethaneSAT will also be the first mission to generate emission rate fluxes through an innovative processing approach rather than just methane concentrations. Results from MethaneSAT measurements will be made publicly available free of charge.

The overall MethaneSAT mission concept, flight system design and ground operations will be discussed along with expected performance and its role in reducing methane emissions.