

## Topics (T)

## Space Technology for Climate Adaptation and Mitigation [1] (6A)

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SPECTRA: AN INTUITIVE PORTAL COMBINING THE BEST SATELLITE METHANE EMISSIONS  
DATA AVAILABLE TO GUIDE INDUSTRIES ON THEIR DECARBONIZATION JOURNEY

**Abstract**

In 2016, GHGSat pioneered the measurement of methane emissions from individual industrial facilities from space with its first satellite GHGSat-D. Now with 6 satellites in orbit, 6 more confirmed to be launched in 2023 and a projected 100 satellites to be placed in orbit by the end of 2026, GHGSat continues to be the only entity in the world operating satellites dedicated to high resolution measurements of methane emissions.

Every day, GHGSat makes methane measurements at hundreds of sites around the world with its constellation of satellites. To optimize the targeting of its satellite observations and turn its measurements into actionable insight, GHGSat developed an in-house expertise in ingesting and analysing other relevant and complementary streams of data such as public satellites and databases of information. In Spring of 2021, GHGSat released SPECTRA, an ESRI ArcGIS based portal to facilitate the navigation and interpretation of its high-resolution measurements and analytics layers. In November 2022 during COP27, GHGSat launched SPECTRA Basic, an enhanced version of its free tool PULSE, showing samples of GHGSat measurements over a global methane concentration map updated weekly. SPECTRA Premium, which builds on Basic and offers greater insight on emissions over a region, coupled with other layers of information, was also introduced at the same time.

The purpose of this paper is to demonstrate how GHGSat proprietary data, in combination with an innovative analytical suite, can provide situational awareness on methane emissions to companies and governments in specific regions and drive opportunities to mitigate them. The unique features of SPECTRA Basic and Premium, and how they can be used to raise awareness and drive methane emissions reductions, will be also outlined in the paper. In 2023, GHGSat will also launch its first CO2 satellite targeting individual facilities worldwide. The paper will also discuss the inherent scalability of SPECTRA to incorporate information on other greenhouse gases and air pollutants to bring the best data in one place and enable informed decision making on climate.