

Capability Snapshot

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Quantane

Quantify methane precisely from images for environmental impact

Application Area

Sector: Energy Transition

Area: Carbon Management

Industry: Oil and Gas

Market: Airborne methane detection

Partnership Opportunities

We are seeking a partner with an interest in providing a test data set for technology demonstration. This capability and application area is available for a:

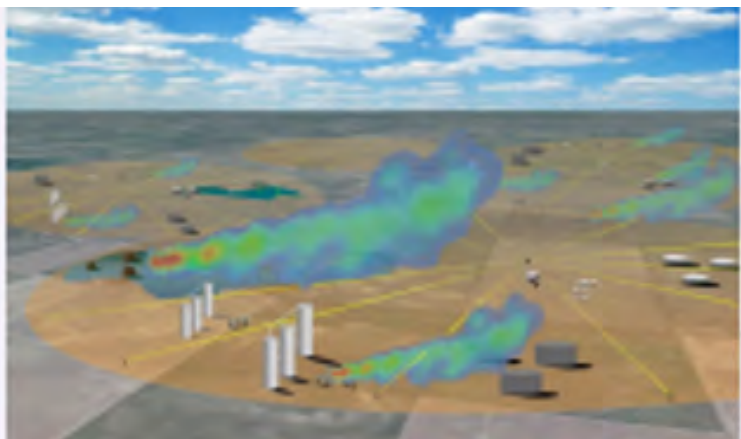
- Cooperative Agreement
- Open Source
- Tech Assistance

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Overview

Methane is the second largest greenhouse gas contributor worldwide, with 25 times more impact on the environment compared to CO₂. Methane emissions from oil and gas infrastructure are the second largest source of emissions in the US. Conventional methane detection and quantification methods have a 50-100% error rate for medium and low emissions (5kg/hr – 100kg/hr).

Quantane is a deep learning model that rapidly screens methane emissions with high confidence from enhanced spectrometer image data that provides less than 5% error measuring the methane source flux rate from these 2D images. It is being developed to reduce the uncertainty associated with quantifying methane emissions from airborne data.

Currently, our model has been tested on synthetic data. Our next key technical milestone is to demonstrate Quantane on a test data set provided by a commercial airborne flyover company.

Specialization/Application Areas

Airborne methane detection is an emerging market with immediate application for oil and gas operators and state and federal regulatory agencies. There are currently five US players in this space.

Quantane provides complete data, accounting for all high, medium, and low methane emission levels. Currently, this laboratory capability supports the DOE Undocumented Orphaned Well project to develop and test technologies for orphaned well identification and characterization.