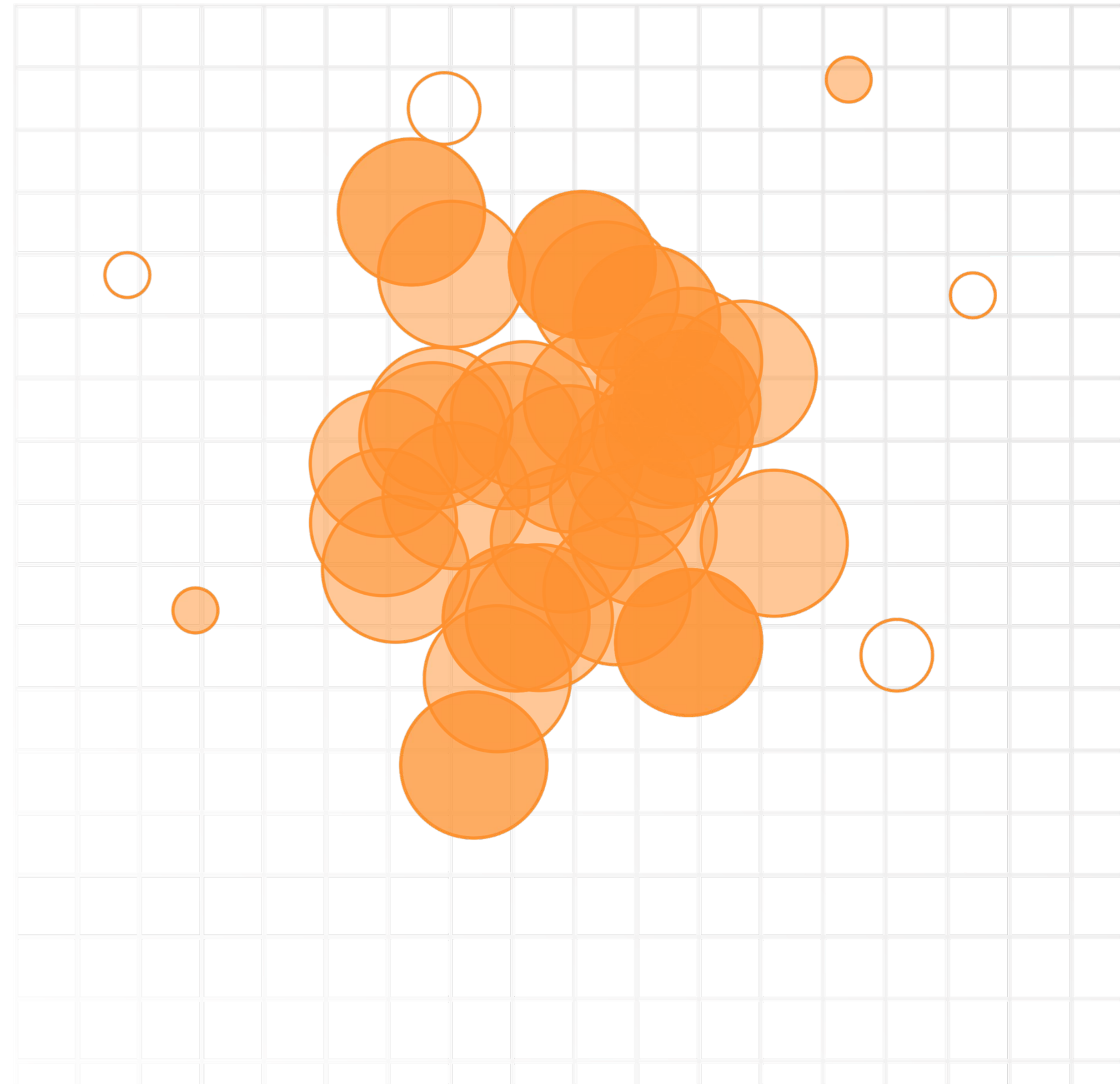


A new generation of satellites enhance the monitoring of methane emissions from coal mines.

Antoine Benoit,
Kayrros



Kayrros Inside:

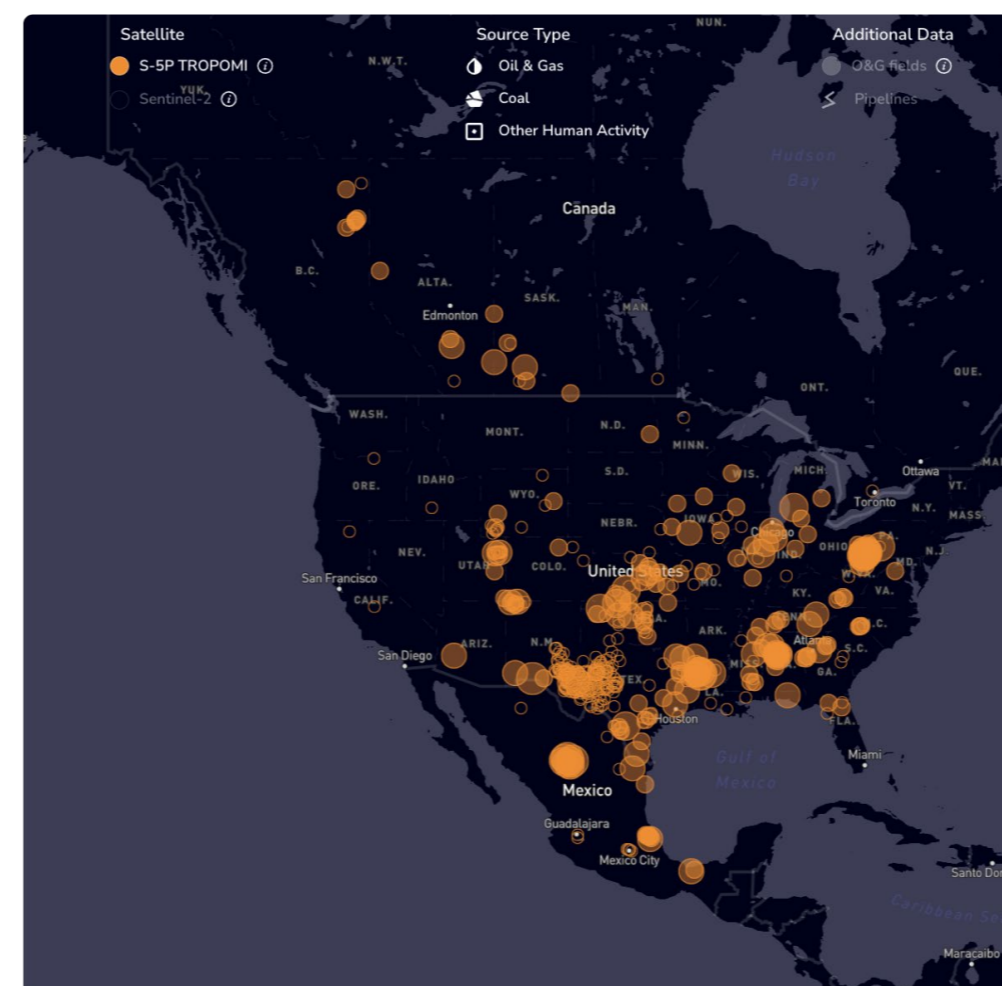
Regulators and media use Kayrros Methane Watch

EU & IMEO set to implement Kayrros powered Methane Alert and Response System.

IEA leverages our insights to shed light on global emission levels, trends and successes.

US regulators mull the use of satellites to set up a third-party notification system.

Bloomberg shares our findings with the world of finance and civil society.



Bloomberg

- Exxon Broke Rules With Late Reporting of Permian Methane Leak**
It's the biggest US operator to publicly acknowledge a misstep in reporting its emissions since high-resolution satellite imagery of methane concentrations has become more widely available.
- ESG: The Cheap, Powerful Climate Fix Energy Companies Are Ignoring**
Preventing routine methane releases would be the single most meaningful measure countries could take to cut emissions from oil and gas, IEA says in annual report.
- ESG: Texas Probes Targa's Failure to Swiftly Report Big Gas Release**
State regulators investigate why US pipeline operator took two weeks to report emissions release in Permian Basin that created plume of methane.
- ESG: This Five-Mile-Long Cloud of Methane Was Spotted Over Wyoming**
Three satellites observed a big plume of the potent planet-warming gas over the US state last month, which scientists attributed to a natural gas facility.

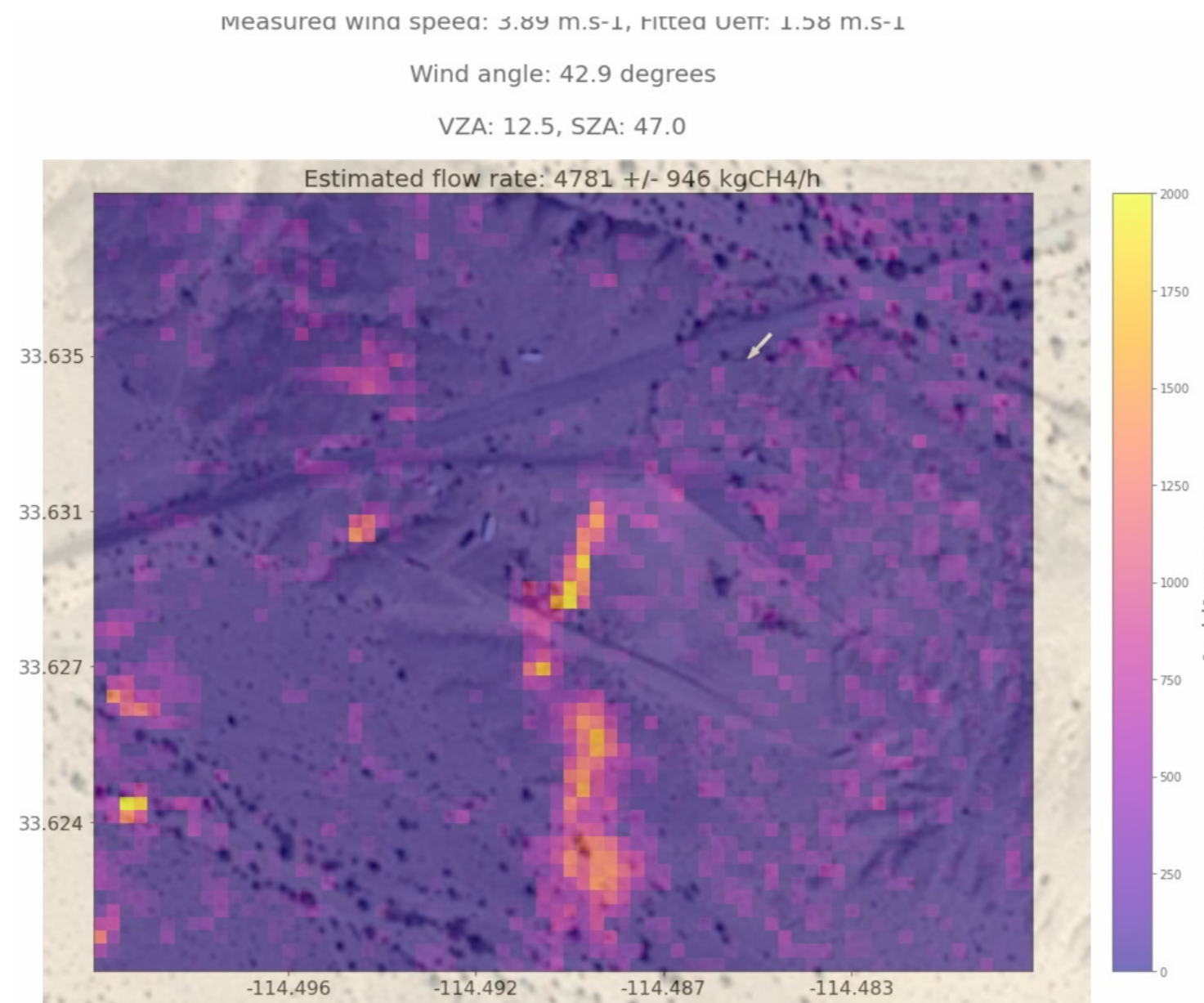
Satellite data is proven:

Multiple field studies led by Stanford University validate the detection and quantification capabilities of Methane Watch

1 Stanford conducted multiple blind tests in Arizona during Oct-Nov 2021 and Oct 2022 - Feb 2023



2 Kayrros used 7 different satellites to detect and measure these hotspots



3 The results of the blind test showed a strong correlation with ground truth data



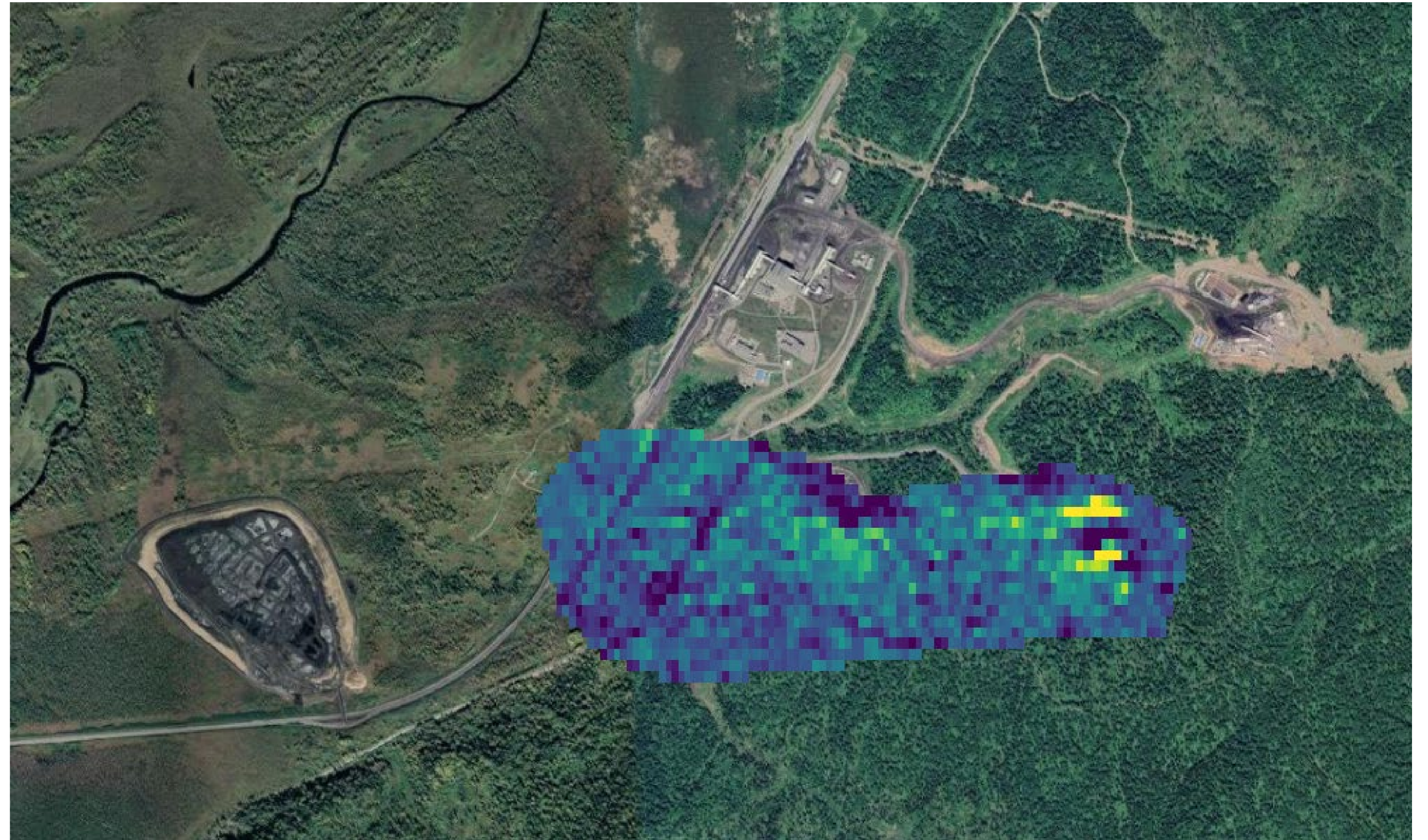
Single-blind validation of space-based point-source methane emissions detection and quantification

Authors

Evan David Sherwin , Jeffrey S Rutherford, Yuanlei Chen , Sam Aminfar, Eric A. Kort, Robert B Jackson, Adam R Brandt

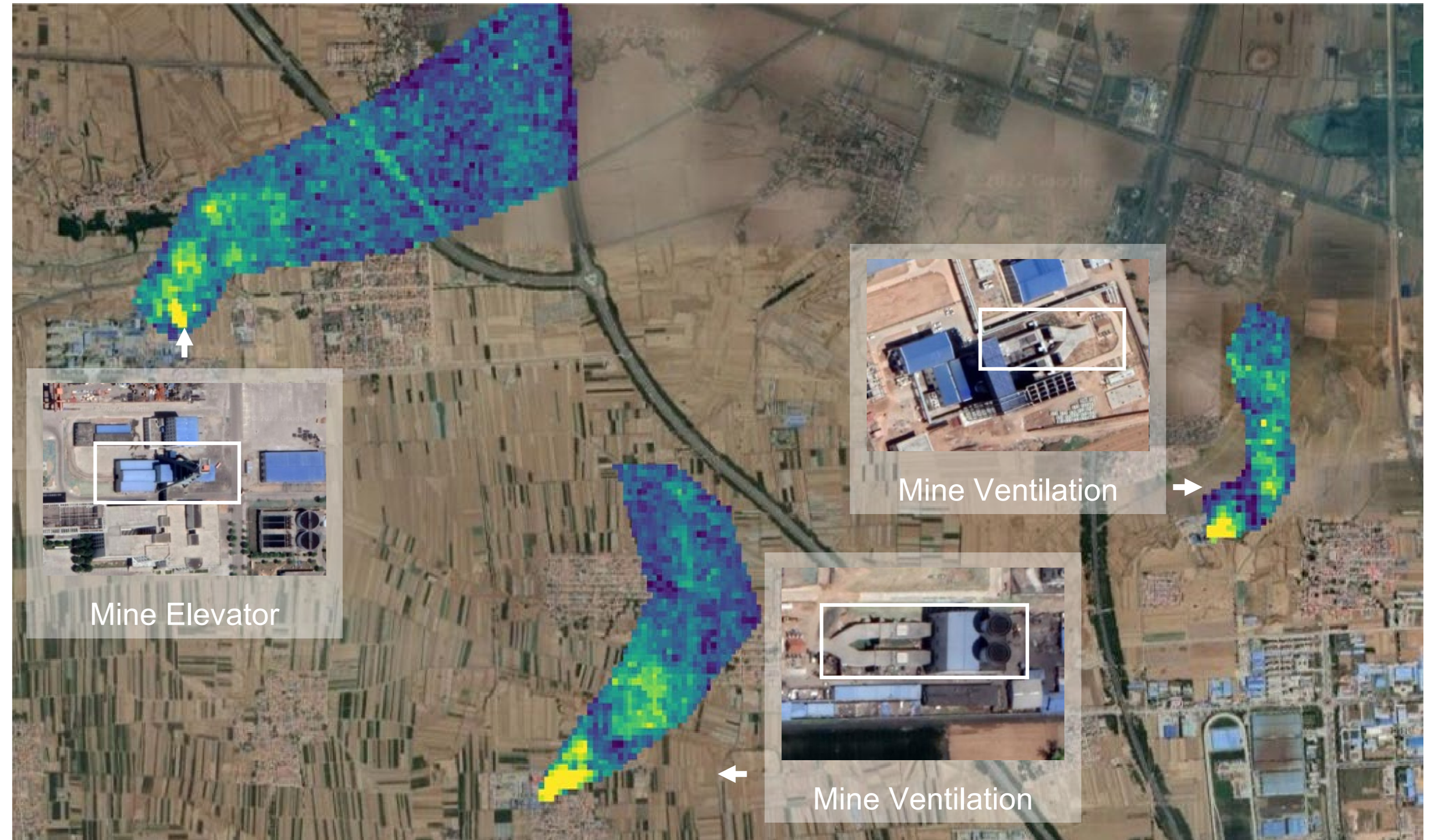
Coal Russia – PRISMA

Hyperspectral detection
on coal mines 1/4



Coal Shanxi – PRISMA (extraction)

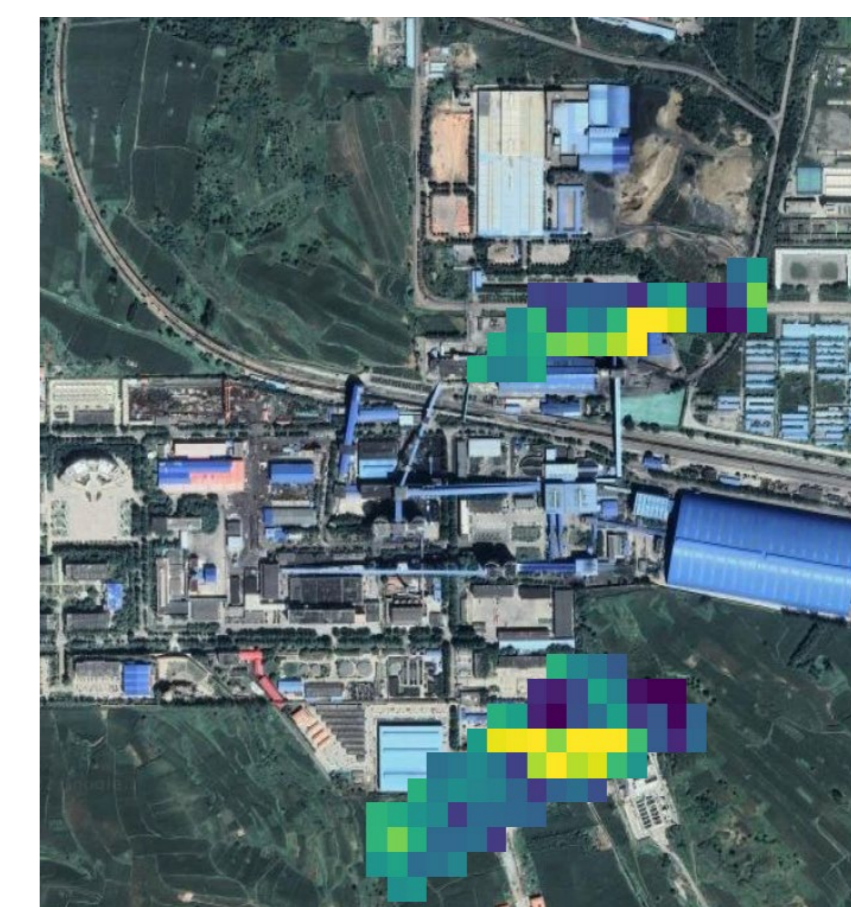
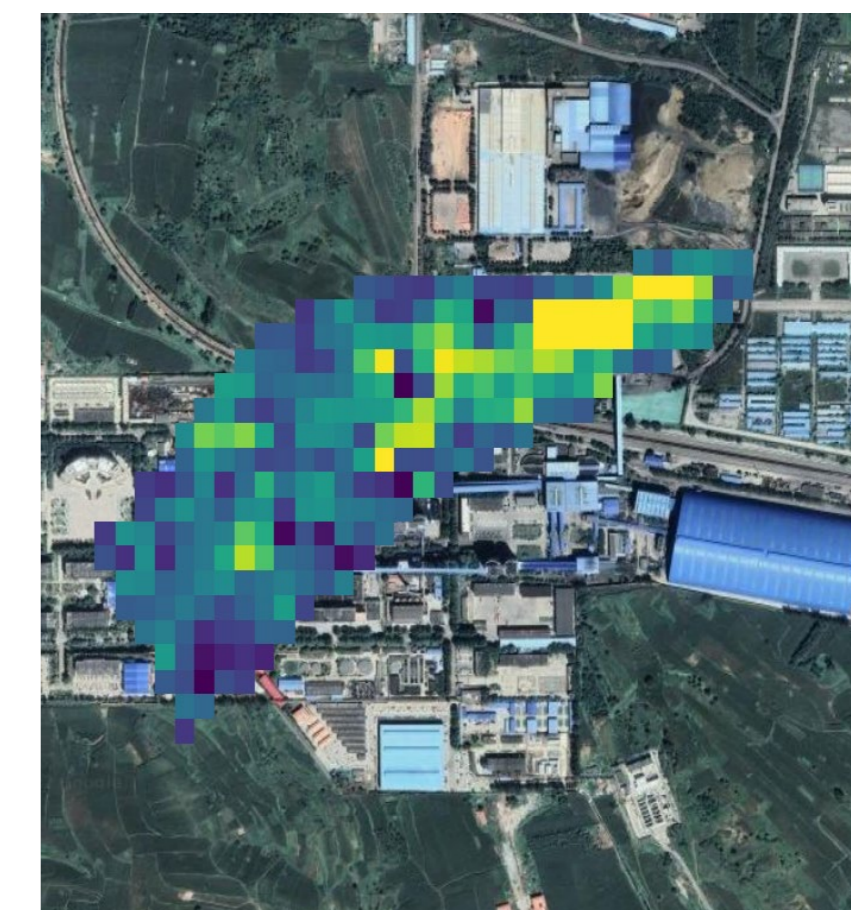
Hyperspectral detection on coal mines 2/4



Coal Shanxi – PRISMA (industry)

Hyperspectral detection
on coal mines [3/4](#)

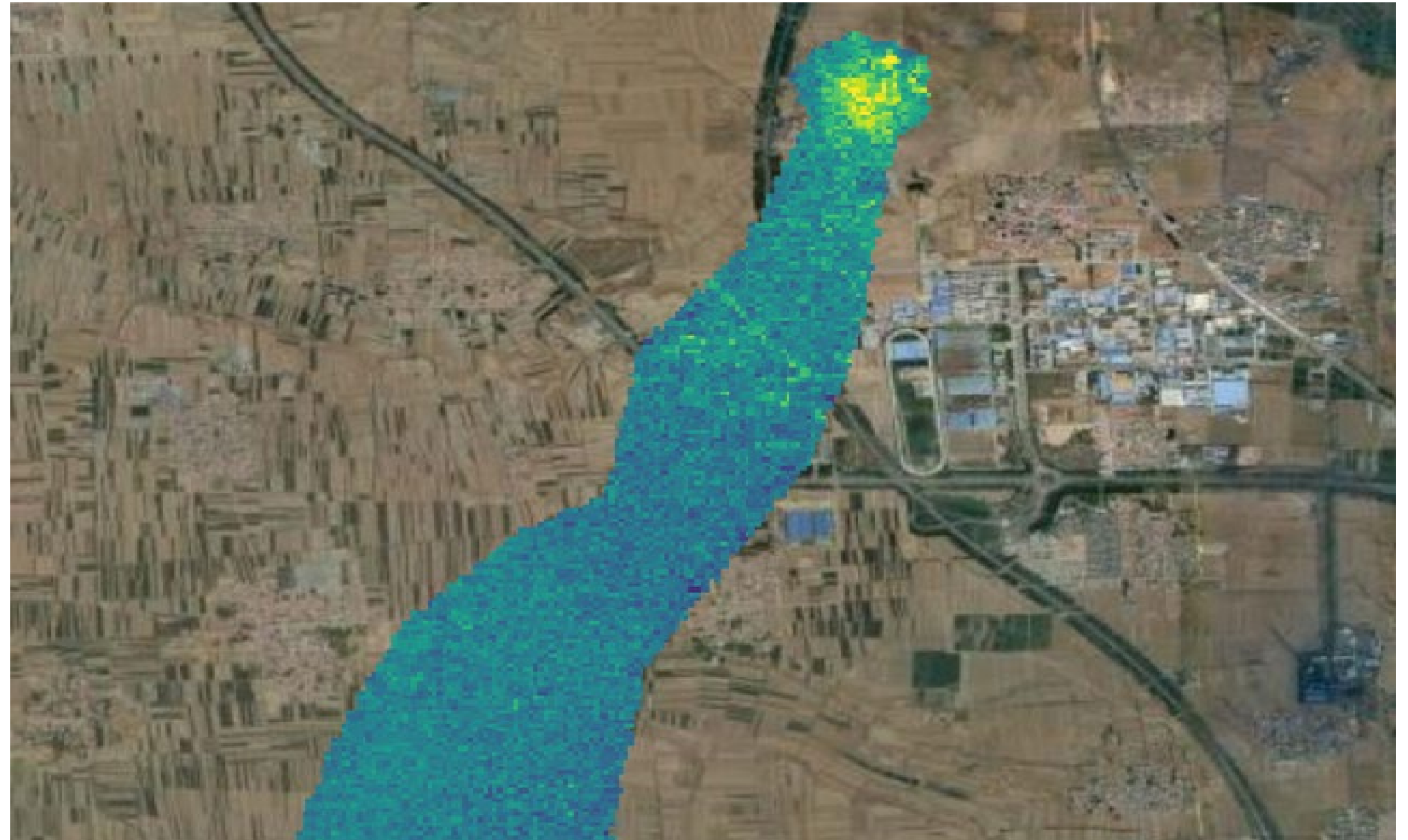
Zhaozhuang Coal
Industry Capacity: **8** Mt / year



Coal Shanxi – EnMAP

(Contains modified EnMAP data ©DLR [2022])

Hyperspectral detection
on coal mines 4/4



Increasing transparency

New satellite missions will be launched next year with great capabilities on coal mines methane emissions monitoring

**Methane
SAT**



More satellites mean better possibility to globally track methane emissions

Kayrros is playing a key role in aggregating satellite public data

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