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Oral
NASA’s Earth Surface Mineral Dust Source Investigation (EMIT) imaging spectrometer has demonstrated its capability for quantification and attribution of fine-scale methane and CO2 sources spanning the oil & gas, waste, and energy sectors. Since launching in July 2022, EMIT has observed over 1,100 methane plumes with emissions varying significantly at the regional scale. In the extended mission planned through FY2026, regions of interest for methane and carbon dioxide emissions will be targeted.

AVIRIS-3, the airborne version of EMIT, enables quantification of smaller emissions sources given improved spatial resolution that compliment EMIT observations from space. Controlled methane release experiments for AVIRIS-3 indicate good agreement with metered fluxes and additional controlled release experiments are planned with EMIT. These instruments offer the potential to improve understanding of greenhouse gas budgets, inform mitigation strategies, and in some cases lead to voluntary mitigation.

In support of NASA’s Open Source Science Initiative, all EMIT data and greenhouse gas data products are available through the Land Processes Distributed Active Archive Center (LP DAAC) and code is open source. EMIT results are also available through the greenhouse gas applications online mapping tool (https://earth.jpl.nasa.gov/emit/data/data-portal/Greenhouse-Gfases/) and U.S. Greenhouse Gas Center (https://earth.gov/ghgcenter/).
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