

# Press Release

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## MAGIC 2019 to survey greenhouse gases

The MAGIC 2019 survey campaign to measure greenhouse gas levels is underway and will run for the next 10 days. Its goal is to map the atmospheric distribution of greenhouse gases in metropolitan France and identify sources of emissions. Supported by CNES and the French national scientific research centre CNRS, MAGIC 2019 is the follow-on to last year's MAGIC-CoMet demonstration campaign.

Carbon dioxide (CO<sub>2</sub>) and methane (CH<sub>4</sub>) are the two main anthropogenic greenhouse gases. To better understand their concentration and distribution across France, notably in the Landes, Orléans and Puy-de-Dôme regions, more than 50 scientists at seven French research laboratories affiliated to CNRS—LMD, LSCE, LERMA, LPC2E, GSMA, OPGC and LOA<sup>1</sup>—and at CNES are taking part in the MAGIC 2019 survey campaign (Monitoring of Atmospheric composition and Greenhouse gases through multi-Instrument Campaigns) funded by CNRS, CNES, ESA and Eumetsat.

MAGIC 2019 will be using the SAFIRE<sup>1</sup> fleet of instrumented aircraft operated for the national weather service Meteo-France, CNRS and CNES, and three other instrumented research sites in France: CNES's balloon operations centre in Aire-sur-l'Adour, the European greenhouse gas survey supersite in Trainou-Orléans and the CO-PDD observatory (Cézeaux Opme Puy-de-Dôme). In all, a Falcon 20 aircraft, 40 balloon-borne atmospheric probes and 20 measuring instruments will survey an area covering western, southwest and central France.

The MAGIC 2019 survey campaign aims to validate two European space missions launched recently to study the composition of Earth's atmosphere: CNES's IASI mission on Metop-C launched in November 2018 and ESA's Sentinel-5P mission launched in October 2017 for the European Copernicus programme. The data collected will also serve to plan future French missions set to track greenhouse gases from space, announced at the COP 21 conference in Paris: the French-German MERLIN mission to measure methane, the French MicroCarb mission to gauge levels of carbon dioxide and the European IASI-NG atmosphere and climate monitoring mission.

Learn more at <https://magic.aeris-data.fr/>

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<sup>1</sup> LMD-IPSL dynamic meteorology laboratory (CNRS/ENS/Ecole Polytechnique/SU), LSCE-IPSL climate and environmental science laboratory (CEA/CNRS/UVSQ), GSMA molecular and atmospheric spectrometry laboratory (CNRS/Reims Champagne-Ardenne University), LOA atmospheric optics laboratory (CNRS/University of Lille), LERMA astrophysical and atmospheric radiation and matter research laboratory (Paris Observatory/CNRS/SU/ENS/University of Cergy-Pontoise), LPC2E environmental and space physics and chemistry laboratory (CNRS/University of Orléans, CNES) and the OPGC global physics institute in Clermont-Ferrand (CNRS/Blaise Pascal University)