THE SOUTHERN EUROPE BIOMASS BURNING PROGRAMME –

DATA MANAGEMENT PLAN

PLAN DETAILS

Plan title	The southern EUrope biomass BURNing programme - DMP
Version	First version
Plan purpose/scope	This is the first version of the EUBURN Data Management Plan (DMP), which will be refined throughout the project lifecycle. It contains all the information required to manage the project data. This data comprises in-situ and remote sensing measurements obtained from various instrumental platforms obtained during intensive field campaigns and long-term observations from European networks, as well as satellite observations and modelling data.
Fields of science and technology (from OECD classification)	Earth and related environmental sciences
Creation date	2025-10-30
Last modification date	2026-01-23
Associated documents (publications,reports, patents, experimental plan...), website	• EUBURN Operational website : https://app.sedoo.fr/euburn • EUBURN project website : https://euburn.aeris-data.fr/ • EUBURN Data: https://euburn.aeris-data.fr/catalogue/

PROJECT DETAILS

Project title	The southern EUrope biomass BURNing programme
Acronym	EUBURN
Abstract	A new wildfire regime is emerging in southern Europe, characterised by larger and more intense fires, and by a fire season that now extends beyond the traditional summer months. In this region, climate projections indicate that the occurrence and severity of fires will increase faster than the global average due to an increased risk of heatwaves and droughts, as well as the evolution of biodiversity towards plant species that are more resilient and less prone to fire. These changes in wildfire regimes reveal significant gaps in the tools and technologies needed to implement comprehensive fire management approaches. The community still faces challenges in predicting which wildfires may escalate into extreme events, and the environmental, climate and health impacts of the associated smoke remain poorly understood. The southern Europe biomass BURNing (EUBURN) programme was developed in response to the need to improve the prevention, monitoring and prediction of wildfire risks in southern Europe. EUBURN integrates multi-year, multi-scale field campaigns, laboratory studies, satellite remote sensing and advanced modelling to establish the research foundations for understanding the complex interactions between wildfires and the atmosphere. Based on this fundamental research, the programme aims to support fire responders, ecosystems and air quality management, while addressing specific climate research requirements by developing new or enhanced operational products, tools and services for predicting and monitoring wildfires and their associated smoke plumes.
Funding	• Interreg Sudoe Programme (S2/2.4/F0327) • Meteo-France • Agence Nationale de la Recherche (ANR-24-CE01-3132) • Centre National des Recherches Scientifiques (LEFE-INSU-EUBURN, LEFE-INSU-SILEX) • French National Agency for Space Studies (CNES-SILEX) • France 2030 (CIR4- MOCCA-Plum@risk_2024, MOCCA-LMV) • Spanish Ministry for Science and Innovation • Department of Education Junta de Castilla y León • FEDER (CLU-2023-1-05) • AGAUR 2021 SGR 00447, the Direcció General de Territori and the data from the Air Quality Monitoring Network (AQMN) all three from the Catalan Government as well as the ATMO-ACCESS project

	• Ministerio de Ciencia e Innovación (MCIN) and Agencia Estatal de Investigacion (AEI) through the Ramon y Cajal grant (RYC2021-034511-I, MCIN/AEI/10.13039/501100011033 and European Union NextGenerationEU/PRTR)
Start date	2025-06-01
End date	2028-05-31
Partners	• Météo-France, CNRS, Univ. Toulouse, CNRM, Toulouse, France • CERTEC, Universitat Politecnica de Catalunya, Barcelona, Spain • Laboratoire de Météorologie Phiysique (LaMP), UMR 6016, CNRS, Université Clermont Auvergne, Aubière, France • Laboratoire d'Optique Atmosphérique (LOA), UMR 8518, Université de Lille, CNRS, Lille, France • Universidade de Évora, Center for sci-tech Research in Earth System and Energy (CREATE), Instituto de Investigação e Formação Avançada, Évora, Portugal • Agencia de Seguridad y Gestión Integral de Emergencias de Andalucía (EMA), Andalucía, Spain • Climat, Environnement, Couplages et Incertitudes (CECI), Université de Toulouse, CNRS, CERFACS, IRD, Toulouse, France • Laboratoire d'Aérologie (LAERO), Université de Toulouse, CNRS, UT3, IRD, Toulouse, France • Instituto de Ciencias Forestales (ICIFOR, INIA-CSIC), Madrid, Spain • Group of Atmospheric Optics (GOA-UVa), Universidad de Valladolid, Valladolid, Spain • Laboratory of Disruptive Interdisciplinary Science (LaDIS), Valladolid, Spain • Agencia Estatal de Meteorología (AEMET), Madrid, Spain • Laboratoire de Physique et de Chimie de l'Environnement et de l'Espace (LPC2E), Orléans, France • OroraTech, Munich, Germany • Pôle de données et de services (AERIS), Paris, France • Service départemental d'incendie et de secours des Bouches du Rhone (SDIS13), Marseille, France • Service des Avions Français Instrumentés pour la Recherche en Environnement (SAFIRE), Toulouse, France • Comissão de Coordenação e Desenvolvimento Regional do Alentejo, I.P (CCDRA), Evora, Portugal • Institut de Combustion Aérothermique Réactivité Environnement (ICARE), Orléans, France • Centre de MicroCaractérisation Raimond Castaing, UAR 3623, Toulouse, France • European Centre for Medium-range Weather Forecast (ECMWF), Shinfield Park, Reading RG29AX, United Kingdom • Institut des Géosciences de l'Environnement (IGE), Université Grenoble Alpes, CNRS, IRD, INP-G, INRAE, Grenoble, France • Institut de Chimie Organique et Analytique (ICOA), Orléans, France • Sciences Pour l'Environnement (SPE), UMR 6134, Università di Corsica, Campus Grossetti, Corte, France • Generalized Retrieval of Atmosphere and Surface Properties (GRASP), Valladolid, Spain • Instituto Português do Mar e da Atmosfera (IPMA), Lisbonne, Portugal • Laboratoire Énergies & Mécanique Théorique et Appliquée (LEMTA), Nancy-Université, CNRS, Faculté des Sciences et Techniques, Vandoeuvre-lès-Nancy, France • Barcelona Supercomputing Center (BSC), Barcelona, Spain • URFM, INRAE, Avignon, France • Agência para a Gestão Integrada de Fogos Rurais (AGIF), Lousã, Portugal • Laboratoire Atmosphères, Observations Spatiales (LATMOS/IPSL), Sorbonne Université, UVSQ, CNRS, Paris, France • nstituto de Diagnóstico Ambiental y Estudios del Agua (IDAE-CSIC), Barcelona, Spain • CREAF, E08193 Bellaterra (Cerdanyola del Vallès), Catalonia, Spain • CSIC, Global Ecology Unit, CREAF-CSIC-UAB, E08193 Bellaterra (Cerdanyola del Vallès), Catalonia, Spain • Australian Bureau of Meteorology, Melbourne, Australia • Weather and Climate Science Research Alliance, The University of Queensland, Brisbane, Australia • Université Clermont Auvergne, CNRS, IRD, OPGC, Laboratoire Magmas et Volcans, F-63000 Clermont-Ferrand, France

Contributors

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DATA DESCRIPTION AND COLLECTION

DATA DESCRIPTION AND COLLECTION OR RE-USE OF EXISTING DATA

Research output description

Name	Data description and collection
Short name	Observation
Description	EUBURN is a multi-organisation, multi-sites, multi-platforms measurement and modelling project. Its key activity is the collection of data by a variety of instruments located at different project sites and platforms, and the development of numerical models.
Type	Dataset
Workpackage	
Keywords	- Wildfire - Prescribed fire - Aerosol - Greenhouse gases - Cloud - Climate change - Meteorology - Air quality
Issued Date	2027-12-31
Identifier type	DOI

Will existing data be reused?

Justification	As part of the French Data Terra Research Infrastructure (RI), AERIS will ensure that EUBURN data is Findable, Accessible, Interoperable and Reusable (FAIR). The objective is to facilitate and enhance reuse within the EUBURN community and by others, whether the data are from aircrafts, drones, balloon, ground-based observations, satellite observations, laboratory experiments or models. Advanced products will be generated to facilitate data use and interface with modelling activities.

How new data will be collected or produced?

Name of the method	Data collection and production
Description	Data will be collected from a variety of instruments at various project locations and platforms by the principal investigators responsible for each instrument or model, and formatted according to the project requirements.
Data Nature	Observational data
Equipments, technical platforms used	- SAFIRE: https://cat.opidor.fr/index.php/SAFIRE …

DOCUMENTATION AND DATA QUALITY

What metadata and documentation (for example way of organising data) will accompagny the data?

Description	The data can be preliminary processing (using generic calibration factors, for example) to achieve approximate levels, and then final processing (using field-collected calibration information) to achieve quantities with the highest possible quality possible with the given instrument and operating conditions. The various data types have the following designations : ● Level 0: raw signals collected from the instrument (i.e. voltages, currents, count rates or other), perhaps with some filtering to remove data corresponding to non-ambient operation (during calibrations or periods of instrument problems, for example). ● Level 1: preliminary atmospheric quantities for examination in the initial period after the campaign. Could be of higher quality than field data (using for example, actual measured calibration factors), but not subject to full QA/QC procedures of final data. ● Level 2: final quantities processed using best calibration information available and carefully checked for errors in collection and processing, and for eventual submittal to data archives. ● Level 3: quantities derived from level 2 data using combinations of data and/or numerical models. It also includes quantities related to comparison with measurements from other EUBURN instruments. Each individual dataset will be accompanied by a metadata document that describes in detail the instrument used to collect the data, the instrument principal investigator and team, the configuration of the instrument, the location of the instrument, the details of the conversion of raw signals to atmospheric concentrations and properties, and the coverage of the data. The data and metadata sheets are created on the EUBURN-AERIS website (https://euburn.aeris-data.fr/catalogue/). Each dataset will be assigned a Digital Object Identifier (DOI) by AERIS.
Metadata/data standards	● NetCDF Attribute Convention for Dataset Discovery : https://rdamsc.bath.ac.uk/api2/m89
Metadata language code	eng
Documentation software	CF Compliance Checker

What methods will be used to ensure their scientific quality?

Description	All data will be visually inspected for anomalous and outlier data, including various screening methods using well-tested codes and plots.To the degree possible, measurements of the same quantity will be compared. These will be possible when similar instruments are deployed at the same site, but also during airborne overflights of ground sites. Comparisons of ambient data will be performed at the highest temporal resolution possible that is consistent with the performance of the instruments involved in the comparisons, and at lower temporal resolutions. Measurement PIs will be encouraged to exchange calibration standards when appropriate. The data for comparisons are examined as soon as possible after the completion of the comparison period so that errors in instrument operation or data handling procedures can be identified and corrected. Each dataset will be connected to a metadata document according to AERIS requirements. PIs should explain clearly in the metadata document (field 1) the philosophy of calibration, zeroing, and the use of this information in the reduction of the data. The specified AERIS format for metadata is compatible with ISO 19115, INSPIRE and other standards and extensible to adapt to the specific features of certain types of data (e.g. airborne and ground platforms, satellite and output models). The connection between dataset and metadata will be accomplished through standardized naming conventions (i.e. metadata file names and data file names will be similar).

LEGAL AND ETHICAL REQUIREMENTS, CODES OF CONDUCT

How will other legal issues, such as intellectual property rights and ownership, be managed? What legislation is applicable?

Description	All data collected during EUBURN are the property of the measurement teams and/or their institutions. These teams agree to share their final data with the rest of the science team, as well as with the wider scientific community and the public. Since these data were collected during a campaign supported by public funds, the data are ultimately owned by the public. Data does not imply freedom to use the data in whatever manner the user wishes. All use of the data must come with invitations of co-authorship of any scientific or non-scientific publications and other conditions put forward by the measurement team. If the measurement team in question does not feel co-authorship is warranted, then a statement in the acknowledgements section of the paper should be considered.

DATA PROCESSING AND ANALYSIS

How and with what resources will the data be processed / analyzed?

Description	Each dataset will be assigned terminology to be used for file naming and version numbers. Data will be submitted to the archive according to the quality of the data (data levels) and associated deadlines. For example, field data (level 1a) will be submitted as soon as possible after collection so that it can be used for decision-making. Some of these data will be set up for "Quicklooks" on the EUBURN data website. Later, preliminary data (level 1b) will be submitted (soon after the completion of the campaign) that has been subjected to somewhat more rigorous examination than field data but is not yet in a final state. Then, final data (level 2) will be submitted that has been fully treated (as described in the metadata) in terms of identification and removal of spurious data, accurate application of calibration factors, and full compliance with the data submittal requirements. If errors are discovered as data are being used, revised data will be submitted in a timely manner to be included in the collection of data stored for each instrument, with version numbers incremented accordingly. The metadata documentation will follow the recommendations and requirements of AERIS.

The following naming convention should be used for all files and datasets, wherever possible:

EUBURN-SILEX<PLATFORM or SITE>_<LAB>_<ID>_L<N>_<DATE>_V<X>.<extension>

Field description :

<PLATFORM or SITE>	Measurement platform (e.g. SAFIRE-ATR42, MTG, MesoNH….)
<LAB>	Name of Laboratory or Institute producing data
<ID>	Field describing the type of parameters contained in the file, and possibly the frequency of the data if the same dataset is available with multiple sampling frequencies. An explicit name should be used to inform a user about the content of the file.
L<N>	Level processing (cf. Documentation and data quality)
<DATE>	DATE or ACQID=Flight ID for ATR42 DATE=YYYYMMDD for daily files

	DATE=YYYYMM for monthly files DATE=YYYYMMDD-HHMM for hourly files DATE=STARTDATE-ENDDATE for a dataset containing multiple files over a period
V<X>	Version of the file or dataset.
<extension>	File format. Preferably use .nc files when possible, compliant with CF convention for metadata

Exemples :

EUBURN-SILEX_SAFIRE-ATR42_CNRM_SMPS-Aerosol-Size-distribution_L2_as250015_V1.nc

EUBURN-SILEX_ATR42-SAFIRE_LaMP_MOCCA_L2_as250018_V1.nc

EUBURN-SILEX_ATR42-SAFIRE_LOA_PLASMA_L2_as250019_V1.nc

Data submission is a two-step process:

1. Create a catalog entry at https://euburn.aeris-data.fr/catalogue/

2. Submit files and datasets via AERIS FTP

STORAGE AND BACKUP DURING THE RESEARCH PROCESS

How will data be stored and backed up during the research?

Storage needs	The AERIS organisation will be responsible for the many data management and stewardship activities involved with the EUBURN data. Data and metadata will be accessible and downloadable from the dedicated website created and managed by AERIS (https://euburn.aeris-data.fr/catalogue/). The data will be stored in NetCDF format, which will remain accessible in the foreseeable future. Each dataset will be accompanied by a metadata document describing the instrument used to collect the data in detail, including the instrument's principal investigator and team, configuration, location, details of the conversion of raw signals to atmospheric concentrations and properties, and data coverage.

DATA SHARING AND LONG-TERM PRESERVATION

How will data be shared?

Modalities of sharing	Data and metadata will be accessible to the scientific community and the public through the AERIS catalogue (https://euburn.aeris-data.fr/catalogue/) as the data analysis process moves forward. The data will be archived in perpetuity by AERIS. Should something happen to the AERIS organization and data archive in the future, data requests will be managed by CNRM.

How will data be long-term preserved? Which data?

Justification	The long-term preservation is guaranteed by AERIS. In case AERIS finds it cannot maintain this database, the responsibility could be transferred to another data centre within AERIS. AERIS is strongly supported at national level (CNRS, Meteo-France, CNES…). In the highly unlikely event that AERIS will have to close operations, we guarantee that we will migrate all content to other suitable repositories, and since all datasets will have DOIs, all citations and links to datasets will not be affected.