

THEME 3

ACCESS TO RESEARCH INFRASTRUCTURES

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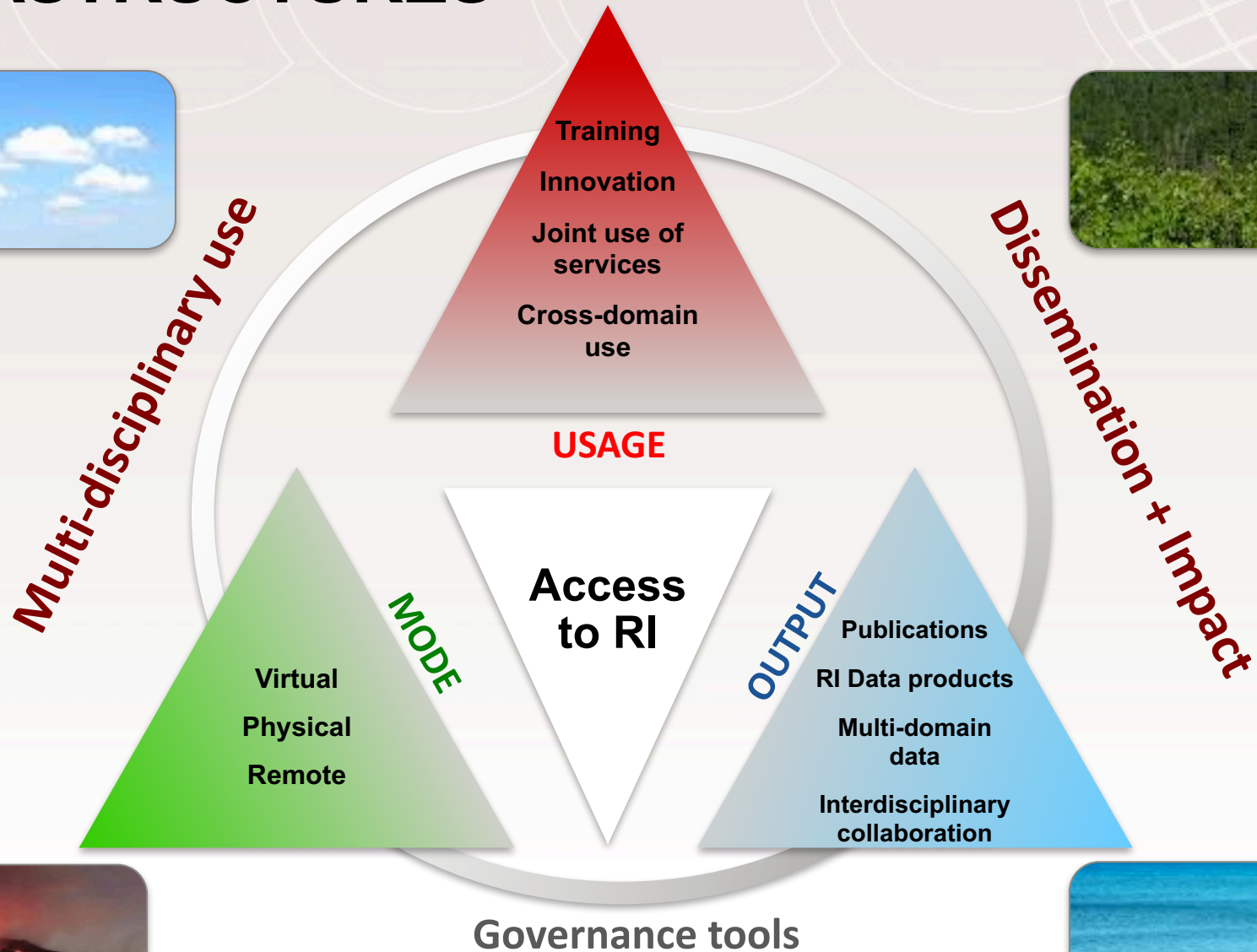


Supporting environmental research
with integrated solutions
- **the Earth is our lab**

MOTIVATION

- Offering seamless access to a broad multidisciplinary community is a common goal of many ENVRI.
- Develop governance for virtual, remote and physical access taking into account the specificity of distributed infrastructures
- Exploring synergies of trans-national access programmes at joint observation sites
- Identify related requirements for the governance tools of RIs

THEME 3 – ACCESS TO RESEARCH INFRASTRUCTURES

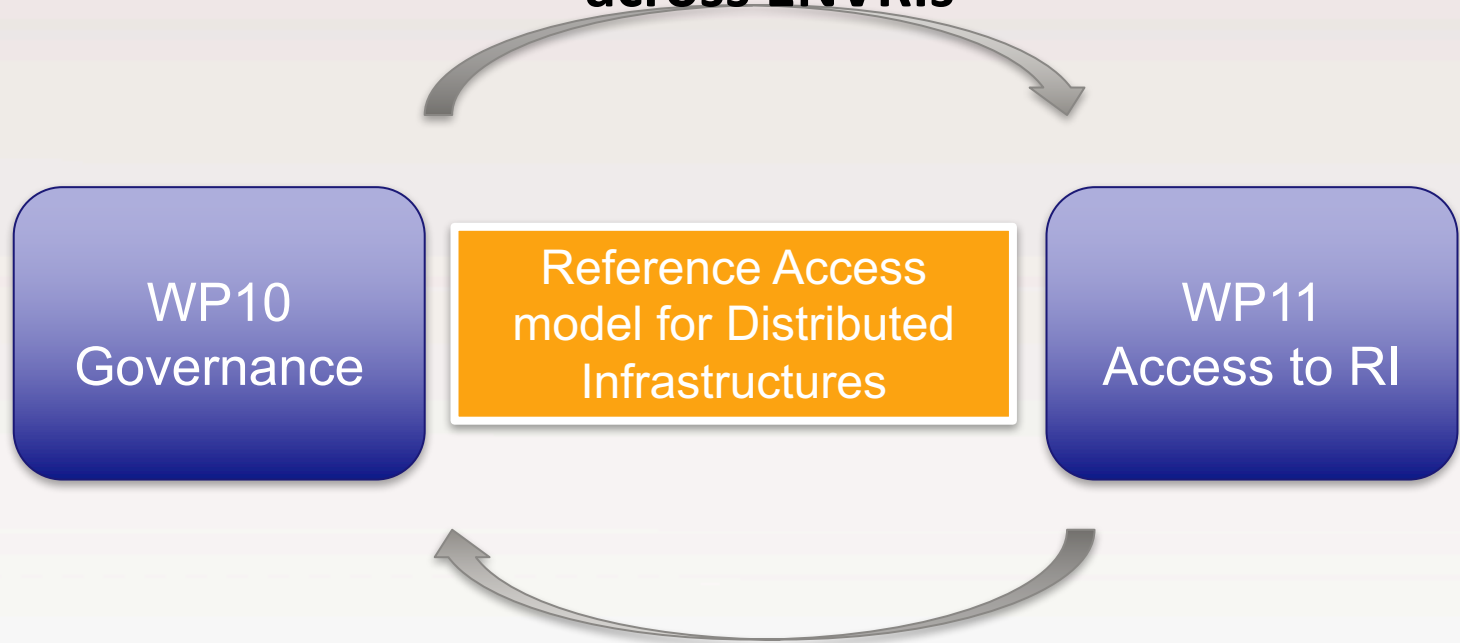


WORK PACKAGES OVERVIEW

- **WP 10**: Governance for sustainable and adjustable access to RIs (EISCAT)
- **WP11**: Improve access to RIs and explore synergies (ANAAEE/INRA)
- **Highlight**: The ENVRI pilot trans-disciplinary access program [CNRS]

THEME 3 - OVERVIEW

**RI-driven recommendation for Access
across ENVRIs**



**User-driven recommendations for
cross-domain physical access**

THEME 3: WPS AND TASKS

WP 10 Governance for sustainable and adjustable access to RIs (EISCAT)

- Task 10.1: Develop guidelines on access to environmental RIs (ACTRIS/CNR)
- Task 10.2: Develop master plan for access to RIs (EISCAT)
- Task 10.3: Develop Strategy for flexibility and sustainability of RIs (EISCAT)

WP 11 Improve access to RIs and explore synergies (ANAEE/INRA)

- Task 11.1: Assess the existing paths of physical access to RIs (EUROFLEETS).
- Task 11.2 Explore conditions for access to RIs across disciplines (ANAEE).
- Task 11.3: Assess the use of governance tools and TNA within clusters of RIs to promote interdisciplinary research (ACTRIS/CNRS)

WP10- STATUS OF ACCESS PROCEDURES ACROSS RIS

Questionnaire : Guidelines on access to Ris,

- Questionnaire prepared by CNR with contributions from several RIs
- Filled by 3 Ris only (+ those preparing the survey) but sufficient to give indications related to modality of access (access modes, kind of access), selection procedure for access (criteria, panel), users (kind, provenance and purpose of physical access), access from private sector, ethical aspects, outreach to users, post-access provisions
- Not yet an integrated analysis of response

WP10 – GOVERNANCE FOR SUSTAINABLE AND ADJUSTABLE ACCESS TO RIS

Deliverables

Del N°	Del Title	Lead	Due date	Submitted
D10.1	Guidelines on access to RIs	CNR	M46	On-going
D10.2	Master plan to facilitate and encourage access to Ris	EISCAT	M46	
D10.3	Description of performance criteria for open access and list of performance indicators	EISCAT	M30	On-going
D10.4	RI strategy for flexibility and sustainability	INRA	M46	

WP10 – GOVERNANCE FOR SUSTAINABLE AND ADJUSTABLE ACCESS TO RIS

Milestones

MS N°	MSTitle	Lead	Due date	Submitted
MS10.1 (MS30)	First version of RI Guidelines for access and RI access prepared	EISCAT	M30	

WP11 – IMPROVE ACCESS TO RIS AND EXPLORE SYNERGIES



Identifying interdisciplinary research topics



Case studies for physical access to fixed platforms



Definition of access process

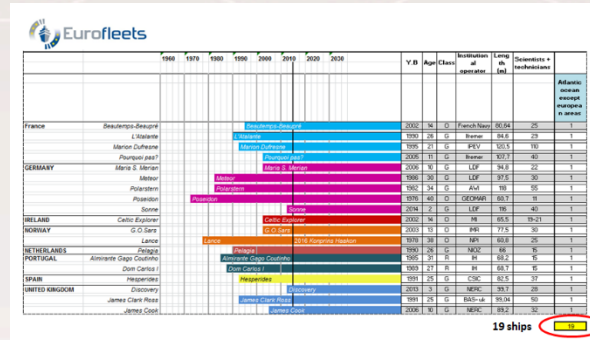
WP11 – TASK 11.1 – END-USER NEEDS / RESEARCH GAPS / POTENTIAL SYNERGIES

- Organisation of an international workshop (jointly with task 4.1) on “Science across observatory networks” (2nd ENVRI week, Zandvoort, NL, May 2016).
- Emerging case studies identified (gaps, new approaches):
 - Nitrogen from the field to the coastal ocean
 - Influences on and from phytoplankton blooms
 - Observations in the Arctic with special focus on methane
 - Simulating and monitoring O₃ and CO₂ deposition/coupling/interactions
- Existence of cross-cutting challenges and benefits of collaboration across disciplines to provide responses to societal challenges

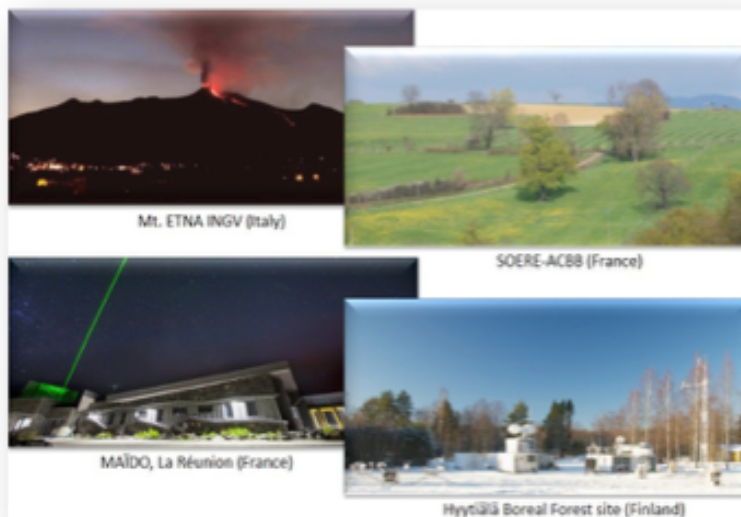
WP11 – TASK 11.2 – ACCESS PROGRAM

Connecting needs and Ressources for ACCESS to Research Vessels

Research Infrastructure	Geographical area
EMSO Marmara	Marmara Sea
EMSO Azores	Atlantic Ocean
EMSO Molène	North East Atlantic
EMSO Galway	North East Atlantic
EMSO Portugal	North East Atlantic
EMSO Hellenic	Mediterranean Sea
EMSO Ligure	Mediterranean Sea
EMSO Nice	Mediterranean Sea
PLOCAN	Atlantic Ocean
PIRATA	Atlantic Ocean
EMBRC	North East Atlantic, Mediterranean Sea, North Sea
KM3NET	Mediterranean Sea
FIXO3 Station M	Arctic Ocean
FIXO3 PAP	North East Atlantic
SIOS	Arctic Ocean



A coordinated ACCESS program to multi-disciplinary platforms in distributed infrastructures



Use case platform	Type, location	ENV research domain	Involved RI(s)
SMEAR II-HYYTIÄLÄ (Finland)	Single site, Boreal forest	ATMO, BIO	ACTRIS, ANAEE, ICOS, eLTER
OSU-R (La Réunion, France)	Multiple site, Southwestern Indian Ocean, mountains	ATMO, BIO, MARINE, SOLID	ACTRIS/LTER
ETNA INGV (Italy)	Multiple site, volcanoes	ATMO, SOLID (BIO, MARINE)	
SOERE-ACBB (France)	Single site, meadow	ATMO, BIO	ICOS

WP11 – PHYSICAL ACCESS TO RIs

Deliverables

Del N°	Del Title	Lead	Due date	Submitted
D11.1	Report on planning and implementing physical access across disciplines	CNRS	M18	✓
D11.2	Plan for sustained multi-year planning of oceanographic vessels for the environment European RIs	IFREMER	M18	<i>Shifted to M26</i>
D11.3	Whitepaper on improving access across to RI disciplines	CNRS	M40	
D11.4	Report on interdisciplinary integration capacity, end-user needs TNA implementation requirement and added-value for the scientific community	INRA	M48	

WP11 – PHYSICAL ACCESS TO RIs

Milestones

MS N°	MSTitle	Lead	Due date	Submitted
MS11.1 (MS7)	Definition of the case studies	CNRS	M12	✓
MS11.2 (MS26)	First case study on access finalized	INRA	M24	✓

OVERALL STATUS

- Success: implementation of
 - WP11 access program
- Issues and corrective actions
 - Theme 3: re-assign responsibilities
 - WP10 : propose internal milestones
 - Ensure better connexion between WP10 and WP11
- Plans for the next period
 - WP11 Address new access
 - Synthesis to develop the reference model concept for

THEME 3 – HIGHLIGHT

ENVRIPLUS TRANS-DISCIPLINARY PILOT ACCESS PROGRAMME



Hyytiälä SMEAR II, Finland



La Reunion multi-disciplinary platform, France



SOERE-ACBB multi-disciplinary platform, France

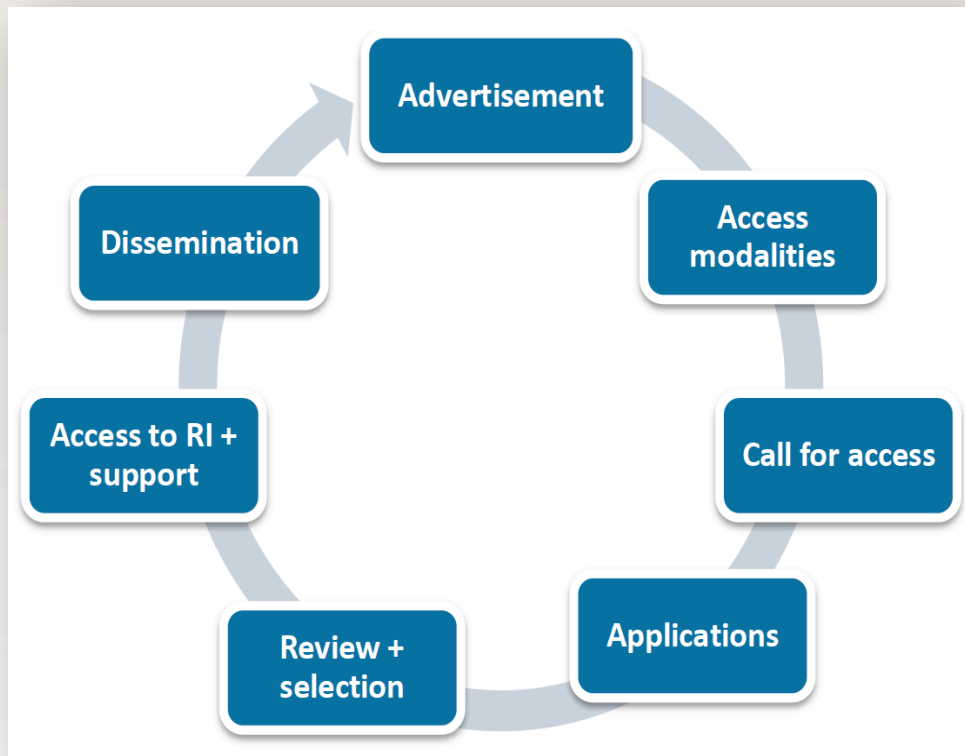


Mt Etna INGV Observatory, Italy

- Successful implementation of a physical access procedure to four multi-disciplinary observation platforms
- Two calls for multi-disciplinary access including selection and support to 20 high-quality projects
- First results following multi-disciplinary access projects supported within ENVRIplus

THEME 3 HIGHLIGHT

(1) Successful implementation of physical access procedure applicable to multi-disciplinary observation platforms



Synergies for access and use of multi-disciplinary observation sites via definition of a **harmonized physical access process** to ENV RI:

- Emphasis on “multi-domain” aspects
- Thorough planning with RI operators providing access
- Optimized application and review process

THEME 3 HIGHLIGHT

(1) Successful implementation of physical access procedure applicable to multi-disciplinary observation platforms



Harmonized physical access => defining the **conditions and modalities of access** applicable to different types of ENV Ris

- **Central access management** (user / access provider/ reviewer)
- **Succinct application form** allowing to evaluate project needs and excellence (user group information, objectives & methodology, availability of results, financial needs): **focus on multi-disciplinarity**
- **2-stage optimized review process** applicable to all ENV Ris: i) Access provider review (on-site capacity and requirement, overall feasibility and planning); ii) Independent peer-review by multi-domain review panel with defined selection criteria; iii) Proposal selection meeting (primary/secondary review)
- Post access reporting / results and impact: lessons learnt / target high-quality proposals / **open science** requirement: availability and reusability of data and results

THEME 3 HIGHLIGHT

(1) Successful implementation of physical access procedure applicable to multi-disciplinary observation platforms

Selection criteria

Access Provider

- **Multi-disciplinarity**: choice of participants / instrumentation / objectives / results...
- Method & experimental setup, choice of infrastructure / **efficient use** / **feasibility**, **on-site support** (instrumentation, staff)
- Project **timeline and capacity** at platform, number of participants, role/need of participants to achieve objectives
- Budget: **planning of resources** (duration, costs), propose grant amount (if different from request, apply same subsistence cost per platform)
- **Strong points, weak points, general comments** (ranking in case of several proposals)
- **Approval / refusal**

Peer Reviewer

- **Multi-disciplinarity (5/30)**: objectives, methodology, participants and role/expertise, use of infrastructure, impact, results
- **Scientific objectives (15/30)**: originality, scientific quality, work plan, interest and impact, availability and user of results
- **Innovation (3/30)**: collaboration with private sector
- **User profile (6/30)**: scientific excellence, training benefit, new user, gender
- **Other 1/30**: bonus
- Ranking: **A, B, C, D, E** (high quality)

THEME 3 HIGHLIGHT

(2) Successful implementation of two calls for multi-disciplinary access and support to high-quality projects

- 27 proposals received from 17 different countries (of which 7 are from outside EU: Madagascar, New Zealand, Pakistan, Singapore, US + Hawaii, Yemen), involving multi-national research teams
- 18 multi-disciplinary proposals accepted according to defined selection criteria
- More than 140 users initially estimated users from multi-national research teams mobilizes > 80 experts and young scientists (of which 65 are TNA users) within case studies
- Total estimated costs: 271 K€, requested to ENVRIplus: 170 K€, accepted and allocated: 110 € (64% of requested)



1st Call

- 18 Jan 2016
- 18 Mar 2016
- 4-6 W review
- 6/16-8/17
- 5000 EUR pP



2nd Call

- 22 Dec 2016
- 24 Feb 2017
- 4-6 W review
- 1/17-7/18
- 10000 EUR pP

THEME 3 HIGHLIGHT

(2) Successful implementation of two calls for multi-disciplinary access and support to high-quality projects

- 27 proposals received from 17 different countries (of which 7 are from outside EU)

++ Access to RI: added value to ENVRI

++ First step towards cutting-edge research at interface of domains: atmosphere, solid earth, bio-ecosphere, marine

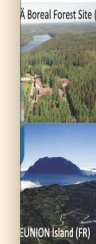
- Cross-domain vs limited multi-domain nature of research project (inter-disciplinary collaboration and multi-domain expertise not truly mature yet, despite efficient advertisement and financial support)

- Curation of data resulting from access

- Total ENVRIplus: 170 K€, accepted and allocated: 110 € (64% of requested)

1st Call for Multi-disciplinary Access to Environmental Research Infrastructures

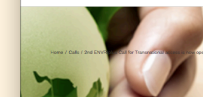
Multi-disciplinary environmental research platforms. ENVRIplus offers access to four research facilities in cross-cutting areas in Europe:



1st Call

- 18 Jan 2016
- 18 Mar 2016
- 4-6 W review
- 6/16-8/17
- 5000 EUR pP

NEWS & EVENTS ENVRI COMMUNITY LOGIN



Environmental Research

Environmental research platforms. ENVRIplus offers access to a number of multi-disciplinary research facilities within the environmental domains: atmosphere, biosphere,



>> Go to ENVRIplus Transnational Access procedure

2nd Call

- 22 Dec 2016
- 24 Feb 2017
- 4-6 W review
- 1/17-7/18
- 10000 EUR pP

THEME 3 HIGHLIGHT

(3) First results following multi-disciplinary access projects supported within ENVRIplus

Radioactive Aerosols and other source parameters for better atmospheric Dispersion and Impact estimatiOns (66 RWD)

EtnaPlum
eLab
Radio

Aerosol nucleation in the ETNA passive plume (9 RWD)

ETNA-
Nuc

IBAIRN

Influence of Biosphere-
Atmosphere Interactions on
the Reactive Nitrogen Budget
(217 RWD)

COSMOS

Constraining gross carbon
fluxes using ecosystem flux
and atmospheric
concentration
measurements of carbonyl
sulfide (COS) and CO₂
(25 RWD)

SIMCIO

Seismic and Infrasound
Monitoring of Cyclones in
the Indian Ocean
(30 RWD)

THEME 3 HIGHLIGHT

(3) First results following multi-disciplinary access projects supported within ENVRIplus

● **EtnaPlumeLabRadio**: Radioactive Aerosols and other source parameters for better atmospheric Dispersion and Impact estimatiOns

- Solid Earth – Atmosphere
- Four measurement campaigns 2016 and 2017
- 11 (4 TNA) Particip.: experts / PhD / Post-doc (FR/IT)
- Aim: improving the characterisation of Mt. Etna as atmospheric aerosols source



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Inner degassing mechanisms =>

Radioactivity of emitted volcanic aerosols: radon daughters ^{222}Rn , ^{210}Pb , ^{210}Bi , ^{210}Po

- Plume dispersion tracer
- Volcanic airmass source attribution

Emission processes =>

- Degassing dynamics controlling eruptive activity:(magma residence time, kinetics of gases extraction

Aerosol near-surface characterisation

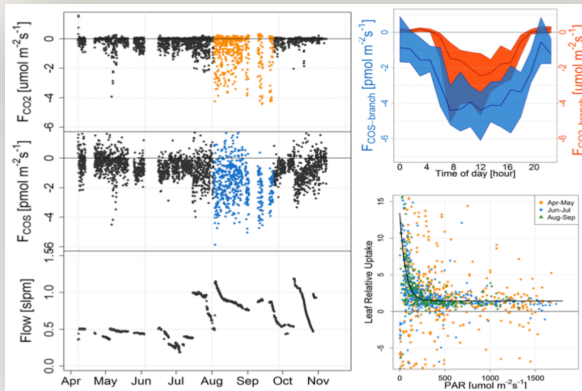
Size-resolved physico chemical characterization

- Detailed characterisation of the emitted aerosols to constrain the regional climatic impacts of Mt. Etna in the Mediterranean area.

THEME 3 HIGHLIGHT

(3) First results following multi-disciplinary access projects supported within ENVRIplus

- **COSMOS:** Constraining gross carbon fluxes using ecosystem flux and atmospheric concentration measurements of carbonyl sulfide (COS) and CO₂



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- Biosphere – Atmosphere
- 5 Participants: expert scientists / PhD (NL, UK, US, FL)
- Aim: improve our knowledge about the fluxes of COS and CO₂ on ecosystem scales, and to derive a better GPP estimate of northern high latitude boreal forests

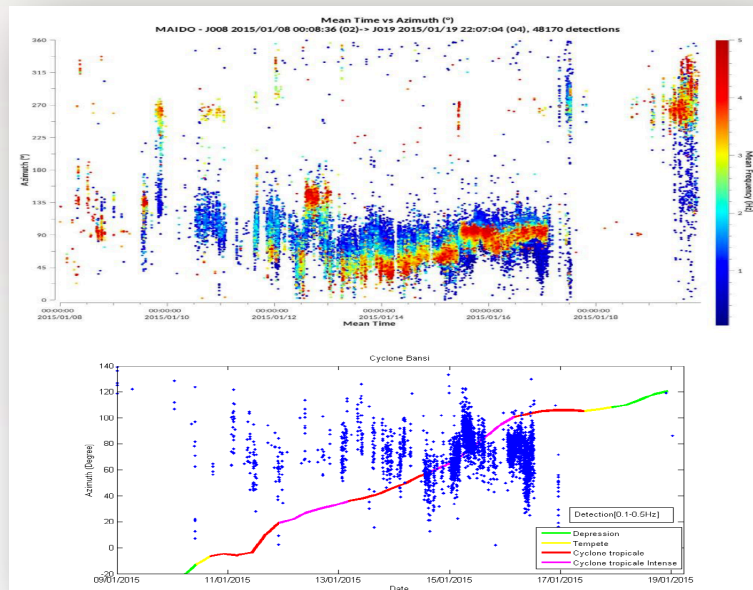
Combined BIO-ATMO measurements (leaf-scale uptake of COS and CO₂, accurate in situ atmospheric concentration measurements of COS for a whole growing season) to verify the use of COS as a tracer for GPP on the ecosystem scale and improve the parameterization of a biosphere to understand the photosynthetic uptake of CO₂ in northern high latitude boreal forest.



(3) First results following multi-disciplinary access projects supported within ENVRIplus

 SIMCIO: Seismic and Infrasound Monitoring of Cyclones in the Indian Ocean

- Atmosphere – Solid Earth
- 4 (1 TNA) Participants: PhD / experts (MG / FR)
- Aim: tracking of cyclones in the SW Indian ocean using seismic and infrasound information



Tropical cyclones -> swells -> standing waves (recorded by infrasound station/ ATM)-> pressure variations through the water column down to the ocean floor -> seismic waves that propagate as surface waves in the oceanic crust (recorded by seismic stations/ SOL EARTH).

=> Regional impact /natural risk management of tropical cyclones.