

**Project Number 282910**

**ÉCLAIRE**

**Effects of Climate Change on Air Pollution Impacts and Response  
 Strategies for European Ecosystems**

**Seventh Framework Programme**

**Theme: Environment**

**D23.6 Report on ÉCLAIRE Summer School**

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Organisation name of lead contractor for this deliverable :  
**UNIVERSIDAD POLITECNICA DE MADRID (UPM)**

Project co-funded by the European Commission within the Seventh Framework Programme		
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<b>PU</b>	Public	<input checked="" type="checkbox"/>
<b>PP</b>	Restricted to other programme participants (including the Commission Services)	<input type="checkbox"/>
<b>RE</b>	Restricted to a group specified by the consortium (including the Commission Services)	<input type="checkbox"/>
<b>CO</b>	Confidential, only for members of the consortium (including the Commission Services)	<input type="checkbox"/>

## 1. Executive Summary

- The ÉCLAIRE Summer School, originally planned to be held in July 2013, was cancelled due to the timing of the event (due to the short notice given and the fact that it coincided with intensive measurement campaigns)
- In its place, the ÉCLAIRE Winter School was held at AgroParisTech in Paris from 2nd to 11th February 2014, with the same programme as the cancelled Summer School. The event was co-organized between INRA, AgroParistech and ÉCLAIRE
- The event was attended by 35 doctoral and post-doctoral researchers from Europe and beyond with 12 participants from the ÉCLAIRE consortium
- A survey filled out by the participants at the end of the event showed that everybody considered the event good (67%) or excellent (33%)
- A full report of the ÉCLAIRE Winter School and its evaluation is included at the end of this document

## 2. Objectives:

The objective of the ÉCLAIRE Winter School was the teaching of advanced measurement techniques and modelling of soil-plant atmosphere exchange of reactive trace gases to doctorate and post-doctorate European students.

## 3. Activities:

The ÉCLAIRE Winter School was co-organized between INRA, AgroParisTech and ÉCLAIRE and was held at the AgroParisTech site in Paris. The event took place from 2<sup>nd</sup> to 11<sup>th</sup> February 2014 and was attended by 35 participants with 12 participants from the ÉCLAIRE consortium. Most of the participants were from diverse European countries with one participant from Hong Kong, China. The program comprised courses, hands-on practical sessions on modelling and measurement techniques, and field visits. Attendees were taught by professors and researchers from the host institutes (INRA and AgroParisTech), along with other ÉCLAIRE partners from the Paris area (LSCE etc.), and leading European scientists on biosphere-atmosphere exchanges and atmospheric chemistry. Full details of the event including the programme are in the attached Report.

## 4. Results:

A survey filled out by the participants at the end of the event showed that everybody considered the event good (67%) or excellent (33%). Additionally, all participants said that they would recommend the Winter School, if a similar event was to be held in the future. Full survey results are in the attached Report.

## 5. Milestones achieved:

The ÉCLAIRE Winter School and its subsequent evaluation comprise Milestone: MS120 ÉCLAIRE Summer School held and evaluated

## 6. Deviations and reasons:

As explained in the 3<sup>rd</sup> General Assembly held in Zagreb in October 2103, this event was originally planned to be held in July 2013. This event did not attract sufficient interest from young scientists both within and external to ÉCLAIRE and had to be cancelled. A survey carried out through the Young Scientists' Forum on the ÉCLAIRE web page revealed that the event did not attract sufficient interest not because it was not appealing but because the event was announced with only 2 months' notice and also coincided with some intensive measurement campaigns. The event was rescheduled for February 2014 and renamed "Winter School". For this reason, MS120 was completed in Month 31, instead of Month 24 as originally planned.

## 7. Publications:

No publications have arisen from this deliverable.

## 8. Meetings:

No meetings were necessary for this deliverable since all discussions were carried out through email exchanges.

## 9. List of Documents/Annexes:

- Full report from the event organisers

**ÉCLAIRE Winter School**  
**Paris 2-11 February 2014**  
***Measurement and modelling of biosphere-atmosphere exchanges of  
trace gases and aerosols***

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*Short report*

**Aim and Scope**

This winter school aimed at teaching advanced measurement techniques and modelling of soil-plant-atmosphere exchange of reactive trace gases. It is targeted to doctorate and post-doctorate European students.

**Description and outcome**

This winter school tried to make the link between ecosystem functioning, air pollution and global change on both modeling and experimental aspects.

The school was targeted to young scientists within the ÉCLAIRE European project community as well as young scientists working in a related field of research. Participants from the ÉCLAIRE consortium had their accommodation paid for by the project

The program comprised courses, hands-on practical sessions on modelling and measurement techniques, and field visits. Attendees were taught by professors and researchers from the host institutes (INRA and AgroParisTech), along with other ÉCLAIRE partners from the Paris area (LSCE etc.), and leading European scientists on biosphere-atmosphere exchanges and atmospheric chemistry. See attached detailed schedule.

The main lectures were around two topics:

1. Measurement techniques data analysis revolving around Eddy covariance techniques and several trace gases (NH<sub>3</sub>, NO, VOC, ...) with two main lectures given by E. Nemitz and C. Amman and 2 practical sessions.
2. Modelling techniques and different model types through the presentation of different models and practical sessions associated to each model
  - Surfalm: Example of resistance approach based model (E. Personne and B. Loubet)
  - Volt'air: Example of process based model with the practical session focused on model evaluation with the R software (S. Genermont, C. Bedos and D. Makowski)
  - CERES-EGC: Example of Ecosystem type model (R. S. Massad and B. Gabrielle)
  - EMEP: Example of chemistry transport model (D. Simpson)

Two additional lecture slots were scheduled one focusing on aerosol deposition effects on ecosystems (J. Burkhardt) and the other on VOC emission parameterization in models (J. Lattiere).

A one day field visit was organized to the FR-Grignon ICOS site in the morning and to the LSCE laboratory in the afternoon.

The first day a 3 minute presentation from each participant was given to encourage networking and a dinner was organized at a typical French restaurant.

The school was followed by a communication training course targeted to ÉCLAIRE participants and organized by the young scientist forum.

The School was co-organized between INRA, AgroParistech and ÉCLAIRE and was held at the AgroParisTech site in Paris.

Funds were available from ÉCLAIRE project (23 k€) as well as from INRA (3.5 k€). Total expenses were 20 k€, the remaining funds will be transferred by INRA back to ÉCLAIRE and can be used for other Young Scientist Forum activities.

Total participants to the winter school were 35 with 12 participants from the ÉCLAIRE consortium. Most of the participants were from diverse European countries with one participant from Hong Kong – China. See attached list.

The winter school was generally well perceived by the participants with 65 % rating the school as good and 35% as excellent. The model evaluation practical with the R software was very well rated as well as the good partitioning between modeling and measurement approaches. Several points were raised as a way to improve the winter school mostly encouraging to (i) have longer practical sessions with perhaps some preparation work to do before the sessions, (ii) assign some time for informal discussions between lecturers and participants around individual projects etc. (iii) have a more coherent schedule especially concerning the measurement aspects were the advanced course was given before the basic course (this was due to lecturers timetables). See attached end of winter school survey results.

A website was made available before the winter school on which all the presentations were posted and which will remain active for some time as a repository for all courses and presentations.

(<https://colloque.inra.fr/summerschooleclaire>)



**Eclaire winter School**  
**Paris 2- 11 February 2014**

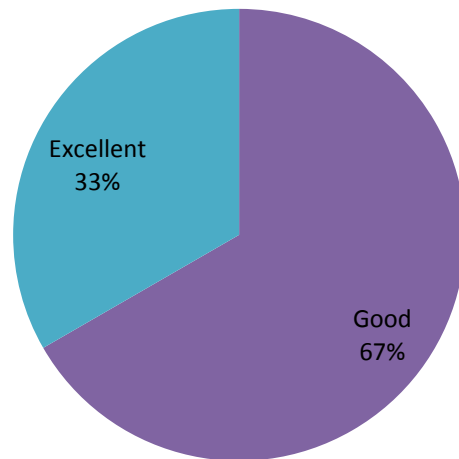
*Schedule*

	9:30-12:45 (15 min coffe break @ 11:00)	13:00-14:00	14:15 to 17:30	
Monday 3	Claude Bernard - room 35 Welcome (R. S. Massad, E. Personne, B. Loubet) 5 min presentation by each participant	lunch Paris	Claude Bernard - room 35 Advanced aerosol flux modelling (E. Nemitz)	Winter School Dinner
Tuesday 4	Claude Bernard - room 35 Advanced aerosol flux measurements technics (E. Nemitz)	lunch Paris	Claude Bernard - room 35 Biosphere-atmosphere exchange in chemical transport models (D. Simpson)	
Wednesday 5	Bus trip to INRA - Meeting point at 8:30 at Avenue du Maine visit INRA-Grignon ICOS & Eclaire field Site - O <sub>3</sub> flux measurements, QCL N <sub>2</sub> O analyzer, O <sub>2</sub> flux chamber, NH <sub>2</sub> wet denuder	lunch Grignon	Bus trip to LSCE and back to Paris at 18:00 visit of the LSCE atmospheric chemistry laboratory. PTRMS VOC, OH reactivity, aerosol measurements	
Thursday 6	Claude Bernard - room 35 Modelling NH <sub>3</sub> emissions from soils with Voltair (S. Genermont & C. Bedos)	lunch Paris	Claude Bernard - room 35 Statistics in model evaluation (basics and R language) (D. Makowski)	
Friday 7	Claude Bernard - room i-21 & i-32 Statistics in model evaluation (practice in R language with Voltair) (D. Makowski, S. Générmont, C. Bedos, B. Loubet)	lunch Paris	Claude Bernard - room 35 VOC emission parameterisation in models (J. Lattière)	Roof garden
Saturday 8 Sunday 9				
Monday 10	Avenue du Maine - amphi B208 Flux measurements of reactive trace gases by Eddy Covariance and related methods. (C. Ammann)	lunch Paris	Claude Bernard - room i-21 & i-12 SVAT models theory and application with Surfalm NH <sub>3</sub> and O <sub>3</sub> fluxes (E. Personne, B. loubet)	
Tuesday 11	Claude Bernard - room 35 Aerosols deposition on leaves and effects on the ecosystems (J. Burkhardt)	lunch Paris	Claude Bernard - room i-21 & i-32 Ecosystem modelling: theory and application with CERES-EGC (R. Massad, B. Gabrielle)	

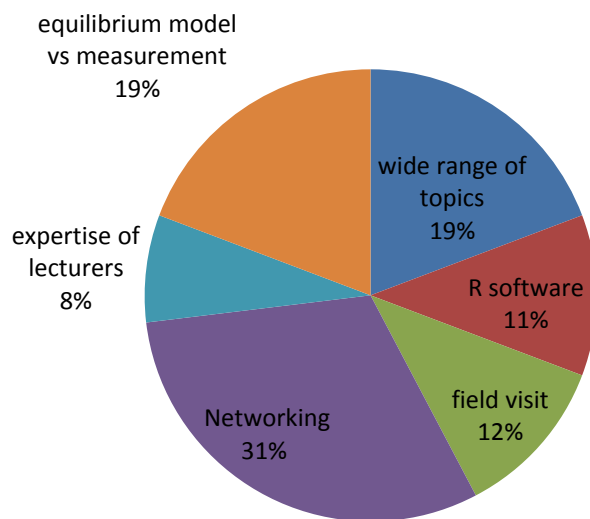
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**Eclaire winter School**  
**Paris 2- 11 February 2014**  
*Survey results*

**1. Rate the Winter School**

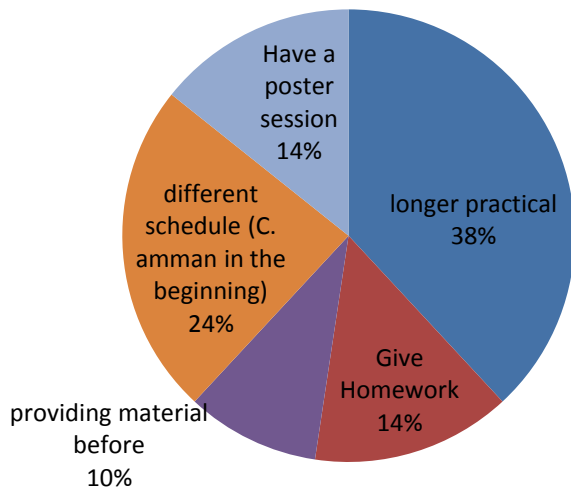


**2. What are the strengths of the winter school?**

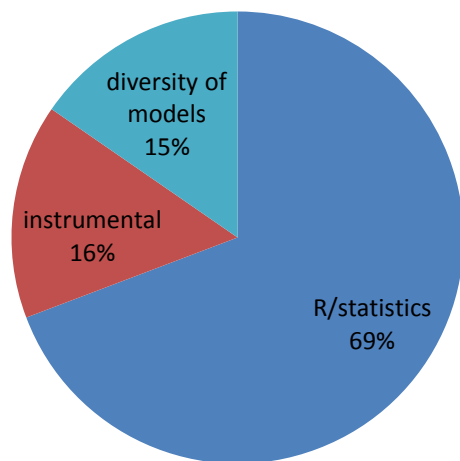




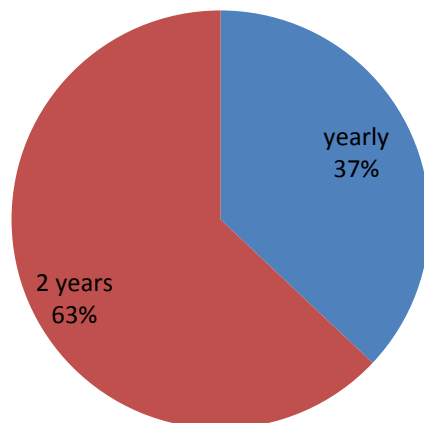
**3. How can it be improved?**



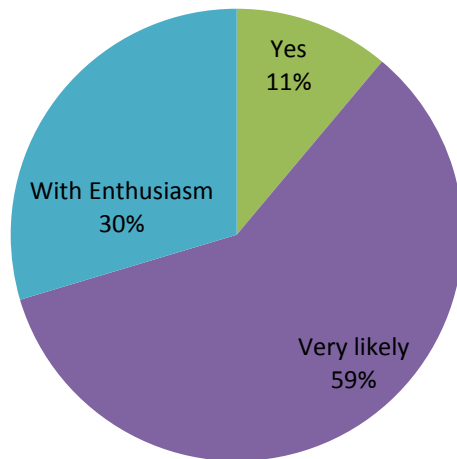
**4. What did you learn?**



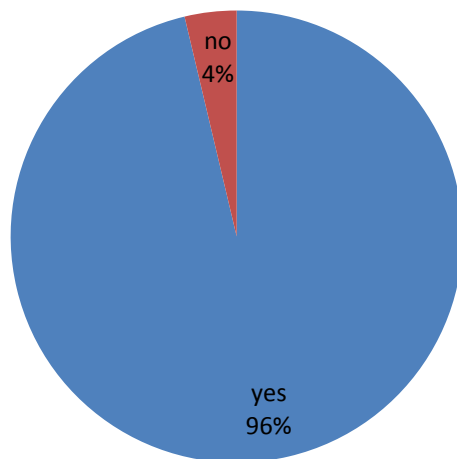
**5. Do you think the school should be maintained, If so at which frequency?**



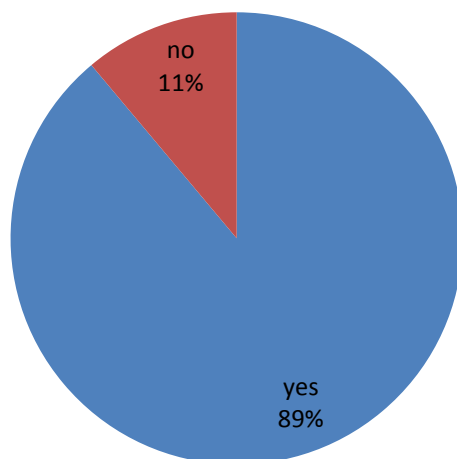
**6. Would you recommend this school?**



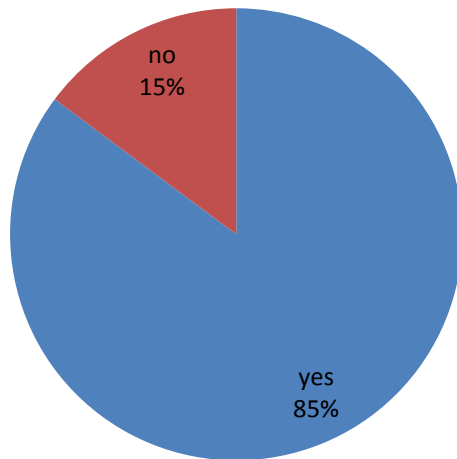
**7. Were the presentations clear and well structured?**



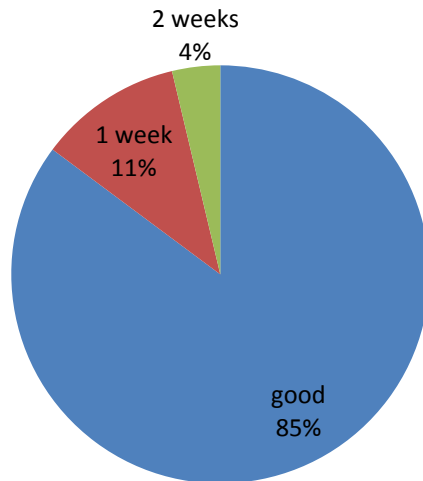
**8. Was there a good equilibrium between practical and theory?**



**9. Were all the subjects covered? If not what was missing?**



**10. Is the duration of this school convenient? If not how long do you think it should be?**



**11. Do you have any suggestions or comments?**

effect of ozone
more statistics
more instrumental practicals
surfatm intro is long
good to have free weekend
shorter lecture spots
introduction with different model types rather than specific models
morning lectures and afternoon practical
urban pollution
Info about Eclairé
too wide and superficial perhaps better to be more specific and advanced