

université  
PARIS-SACLAY

GRADUATE SCHOOL  
Géosciences, Climat,  
Environnement, Planètes



RéGEF  
Réseau Géochimique & Expérimental Français



## FINAL PROGRAMME

### Thematic School TRACING 2024

## Emerging strategies of sediment and contaminant tracing in catchments and river systems



3 – 7 March 2024

Meeting place : Centre Port-Royal, Saint-Lambert-des-Bois, France

Main organizer: Olivier Evrard, Laboratoire des Sciences du Climat et de l'Environnement (LSCE)

With the support of all participants

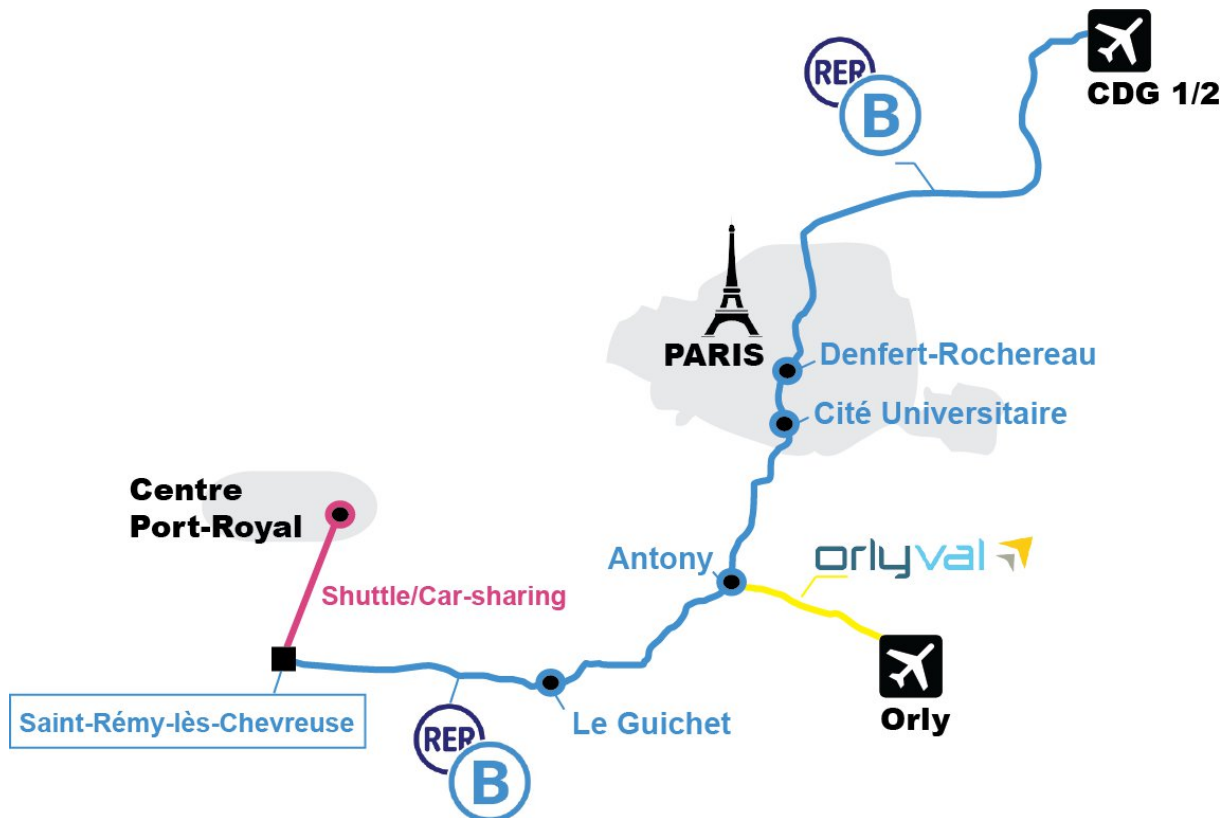
## Final programme and sessions

**Sunday 3 March 2024**

From 17:00: arrival and installation

For those arriving by train at the station 'Saint-Rémy-lès-Chevreuse' (RER B line), a shuttle and car sharing will be organised in front of the station at 17:00 (5 pm).

Contact (WhatsApp possible): 00 33 6 09 45 42 68 (Olivier Evrard).



19:00: Welcome drink

20:00-21:30 Dinner

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**Monday 4 March 2024**

**Session 0 – General introduction on sediment tracing**

8:30-9:30 General introduction of the School, lessons learnt from previous events **O. Evrard**

9:30-10:30 Welcome speech/ presentation of each participant (2 min. each) **2-slide template provided to all participants**

*Coffee break (20 min.)*

10:50-11:30 A pioneer sediment tracing approach in Rio Grande do Sul, Brazil, South America **J. Minella**

11:30-12:10 Implementing sediment tracing approaches in semi-arid regions based on past experiences from the Brazilian and international communities (lessons learnt from Nordeste, Brazil) **Y. Jacques da Silva**

12:10-12:30 The assessment of soil erosion by local communities - supportive evidence for sediment tracing (Lake Tana Basin, Ethiopia) **T. Abere Chekol, A. Frankl**

12:30 -14:00 Lunch break

### **Session 1 – Innovative techniques in the field**

14:00-14:30 Testing mobile ground-based gamma-ray spectroscopy for measuring radionuclides in the field **L. Gaspar**

14:30-15:00 - High frequency suspended sediment source fingerprinting using in situ data: proof of concept and lessons learned **N. Martinez-Carreras**

15:00-15:20 *Break*

15:20-16:00 Development of low cost sensors and open source river monitoring: which prospects for sediment fingerprinting? **O. Navratil**

16:00-16:40 Banking on Sediment Sources at a Continental Scale **A. Gellis**

16:40-17:20 Advances in research dealing with environments exposed to wildfires **J. Garcia-Comendador**

17:20-18:00 The contribution of sediment fingerprinting in plain environments of Argentina **G. Ares**

18:00-18:30 Wrap-up session

20:00 – 21:30 Dinner

## **Tuesday 5 March 2024**

### **Session 2 – Today's and tomorrow's tracers**

8:30-9:10 Combining today's and tomorrow's tracers and the use of sediment coring in sentinel lakes – experience from Mayotte Island, Indian Ocean **A. Foucher**

9:10-10:30 **How can the drone technology further support the sediment tracing technique? All participants (slides from the participants are welcome)**

Workshop/discussion/practical work: how to include innovative techniques in the field?

*Coffee break (15 min.)*

10:45 – 11:35 Sediment residence/storage times in river systems: the role of fallout radionuclides (FRNs) **Enrique Muñoz-Arcos**

11:35-12:30 Spatiotemporal heterogeneity of denudation rates in a catchment inferred from long-lived cosmogenic nuclides **N. Takahashi**

12:30 -13:45 *Lunch break*

13:45-14:30 The use of particle size and sediment geochemistry as a tracer for sediment provenance in proglacial environments (southern Andes, Chile) **S. Bertrand**

14:30-15:00 Dealing with particle size correction factors in sediment tracing **L. Gaspar**

15:00-15:20 *Break*

15:20-16:20 The need of hypothesis-based research in sediment fingerprinting **N. Martinez-Carreras**

16:20-17:10 The use of eDNA to reconstruct land use/biodiversity changes **A. Foucher & O. Evrard**

17:10-18:00 Using sediment fingerprinting as part of a wider environmental management strategy in relationship with stakeholders **J. Estrany**

18:00-18:30 *Wrap-up session*

20:00-21:30 Dinner

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### **Wednesday 6 March 2024**

#### **Session 2 – Tomorrow's tracers (continued)**

8:30-9:20 What can we learn from source-to-sink palaeoclimatic studies in contemporaneous sediment fingerprinting? **C. Skocznieczny**

9:20-9:40 Challenges when applying sediment tracing to marine sediment **R. Bizeul**

9:40-10:15 Potential EU funding calls for supporting tracing research **N. Martinez-Carreras**

*Coffee break (15 min.)*

#### **Session 3 – The statistical/modelling procedures and tools: from the measurements to the un-mixing model results**

10:30 – 11:30 From Theory to Practice: Applying Mathematics to Enhance Sediment Source Fingerprinting **B. Latorre** ([by videoconference](#))

11:30-12:20 Recent advances on the selection of tracers / comparison of the main approaches **T. Chalaux-Clergue and R. Bizeul**

12:30-14:00 *Lunch break*

14:00-15:00 How to define the optimal number of samples in sediment fingerprinting? **J. Minella and L. Buligon**

15:00-16:00 Tracing Sediments Worldwide: different tracers, mixtures, and their utility **I. Lizaga**

16:00-17:00 Coding Session: Navigating Tracer Selection – Methods, Advantages, Limitations, and Practical Tips **I. Lizaga**

17:00-18:00 The importance of combining several models and processing methods for the use of infrared spectroscopy as a low-cost tracer **T. Tiecher** ([by videoconference](#))

18:00-18:30 *Wrap-up session*

**General discussion on the potential links between palaeo/contemporaneous research**

## Feedback on designing a model inter-comparison exercise and strategies for future research

20:00-21:30 Dinner

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**Thursday 7 March 2024**

### Session 4 – International and open access strategy for the future

8:30-8:50 The use of biomarkers as a novel tracer **A. Huguet**

8:50-9:10 Difficulties to conduct interdisciplinary approaches: a case study using eDNA analyses **A. Frankl**

9:10 - 10:20 General feedback from the participants on the Thematic School **2-slide template provided to all participants**

*Coffee break (15 min.)*

10:35-12:15 Sharing datasets; current status and the way forward **O. Evrard and all.**

Conclusions and perspectives, upcoming challenges (e.g. reducing ecological footprint of research), organisation of common activities and events **O. Evrard and all.**

*12:15-13:30 Lunch break*

Free discussions and closing of the School

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**For those who are interested, a visit and a debriefing session may be organised at LSCE lab on Thursday 7 March in the afternoon or on Friday 8 March 2024 (contact: [olivier.evrard@lsce.ipslf.fr](mailto:olivier.evrard@lsce.ipslf.fr))**

**(LSCE – Orme des Merisiers – Bat. 714 – Gif-sur-Yvette)**

