1st EPOS Summer School

23-27 June 2025 |Espai Cràter | Olot, Spain

DAY 1 - Monday 23 June

Arrival is highly recommended by lunch time, due to the national festivity of St. John, a night of celebration when people come together for one of the most magical and joyful popular festivals of the year. Those arriving on Monday morning are invited to join us for a nice guided walk in town.

17.00-19.40 **Icebreaking, presentation of the participants and their scientific use cases**

Presenting Code of Conduct followed by presenting and selection of participants' scientific use cases

20.00-22.00 **Dinner and social activities**

DAY 2 - Tuesday 24 June

9.30-12.30 Foundations of Data / Open Science and FAIR Principles

9.30-10.00 **Research data lifecycle: phases and actors ; introducing FAIR and OPEN concepts**

Understanding the data lifecycle, FAIR principles, and FAIR components

10.00-10.30 **Focus on Findable/Accessible: (meta)data formats, (meta)data standards, examples and applicability, PIDs, DOIs, DataCite**

Understanding Persistent Identifiers, DOI, metadata schemas, catalogues, and open data portals

10.30-11.00 **The role of the repositories for Open Science. What can be done as a researcher to make your data FAIR.**

Understanding how domain repositories work and how researchers can exploit them to make data FAIR

11.00-11.30 **Coffee Break**

11.30-12.00 **(Meta)data formats, (Meta)data standards, examples and applicability**

Understanding (meta)data standards and formats. Physical Sample standards

12.00-13.00 **Data standards and formats in the geoscience community**

Interactive lecture + discussion re: what kind of data is used, challenges in using different data types, etc

13.00-14.30 **Lunch Break**

14.30-15.20 Data Regulation

14.30-15.30 **EU data Strategy, GDPR, IPR, INSPIRE how to use licenses to protect IPR and maximise reusability, different licenses for different scientific products, applying licenses to new and derivative works;**

Understanding the rules of data sharing: Introduction to research data sharing regulations in Europe (and elsewhere)

15.00-15.10 **Data regulation outside the EU**

Understanding data regulation in Australia

15.10-15.20 **Data regulation outside the EU**

Understanding data regulation in the United States of America

15.20-16.50 OPEN Science and FAIR principles

15.20-15.50 **Not only FAIR: The CARE principles**

Introduction and familiarization with the CARE principles

15.50-16.20 **Coffee Break**

16.20-16.50 **Interactive Session: FAIR Data**

Memorising the key FAIR concepts

16.50-19.00 Geoscience data, and open portals

16.50-17.50 **Discussion: Use of open geoscience data portals**

Awareness about open data portals relevant to geoscientists

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DAY 2 - Tuesday 24 June *continued*

17.50-18.05 **Introducing EarthScope**

Memorising the EarthScope Organisation and Governance

18.05-18.20 **Introducing AuScope**

Memorising the AuScope Organisation and Governance

18.20-18.35 **Introducing EPOS**

Memorising the EPOS Organisation and Governance

DAY 3 – Wednesday 25 June

9.30-11.10 Using Research Infrastructures for Geoscience: Theory and Practice (Part 1)

9.30-10.20 **Cloud computing with EarthScope and GeoLab**

Understanding how to utilize the EarthScope Research Infrastructure

10.20-11.10 **Powering Australian Geoscience: Research Data and Tools from the AuScope Virtual Research Environment (AVRE)**

Understanding how to utilize the AuScope Research Infrastructure

11.10-11:40 **Coffee Break**

11.40-12.10 Geoscience data and open portals

11.40-12.10 **The "Where" matters: visualizing and presenting geoscientific data beyond the spreadsheet**

Understand Diversity: Distinguish between the main types of geographic data and the different options to be presented in maps, gifs and animations.

12.10-15.30 Using Research Infrastructures for Geoscience: Theory and Practice (Part 2)

12.10-12.30 **The EPOS Data Lifecycle**

Understanding how to map the EPOS data lifecycle phases and explain the roles of different actors involved

12.30-13.00 **Introduction of EPOS Platform and VRE in EPOS**

Understanding how to navigate the EPOS Platform, search for data, and assess its relevance for specific research questions

13.00-14.30 **Lunch Break**

14.30 -15.30 **Hands-on training: Using the EPOS Platform**

Understanding how to use the EPOS Platform to visualize datasets, combine data from multiple sources, and download it for analysis

15.30-16.00 Data Analysis and Automation

15.30 -16.00 **Discovery, automation/scripting, and integration of EPOS data and services: Basics workflows in JupyterLab**

Understanding how to execute code, visualize data, and document workflows using Jupyter Notebooks

16.00-16.30 **Coffee Break**

16.30-17.30 **Analysis of multidisciplinary data using Jupyter Notebooks: Scientific use case**

Understanding how to create custom Jupyter Notebooks, including importing data, running analyses, and sharing results

17.30-19.00 **Linking EPOS platform with different distributed Research Infrastructures to investigate Climate–Seismicity interactions in a changing climate**

Highlighting the power of open, FAIR data services for cross-disciplinary discovery while equipping students with the skills needed to navigate heterogeneous web APIs, assemble multi-domain datasets, and evaluate potential climate–seismicity interactions in a warming world

DAY 3 - Thursday 26 June

9.30-16.30 Group Work

9.30-11.00 **Development of selected use cases**

Participants work in groups, define a workflow, and automate it

11.00-11.30 **Coffee Break**

11.30-13.00 **Development of selected use cases**

Participants work in groups, define a workflow, and automate it

13.00-14.30 **Lunch Break**

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DAY 3 - Thursday 26 June *continued*

14.30-16.30 Development of selected use cases

Participants work in groups, define a workflow, and automate it

16.30-17.00 Coffee Break

17.00-19.00 Presentations of group work

Participants present the results of their groupwork

20.00-22.00 Closing Dinner

DAY 4 - Friday 27 June – Optional Field Trip

08.30-13.00 Excursion to the volcanic field

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