

Report on Cargèse 2023 School on Subduction Zone Processes

Date: October 23, 2023

Prepared by: Ruyu YAN

Introduction:

The primary goal of this school is to provide a comprehensive overview of the current state-of-the-art and challenges in the study of active subduction to young Earth scientists, including Master's students, PhD candidates, and post-doctoral researchers. This program is designed to bring together experts from various fields, including geodynamic modelers, geologists, seismologists, geodesists, and geophysicists, fostering interdisciplinary collaboration and facilitating a holistic understanding of the complex processes within subduction zones. Furthermore, it aims to facilitate discussions on potential interactions and retroactive effects.

Taking place at the picturesque Institut d'Études Scientifiques de Cargèse (IESC) in Corsica from October 9th to 13th, the event successfully attracted a diverse cohort of geoscientists, researchers, and students hailing from countries such as France, Germany, Switzerland, the USA, Japan, Chile, China, and more.

Key Highlights:

Over the course of five days, the school explored four distinct themes: “What's down there?”, “Short-term dynamics of the subduction”, “Slow to fast earthquakes”, and “The subduction seismic (super-) cycle”. The program featured a wide array of activities, including oral sessions and poster presentations, offering in-depth insights into the multifaceted realm of subduction zones. Some of the notable highlights included:

1. Oral session: These sessions encompassed 45-minute keynote presentations by renowned experts, followed by 30-minute intermediate talks and 15-minute short talks. The format allowed for discussions and interactions among participants.



Figure 1: Oral presentation by Satoshi Ide

2. Poster Sessions: The poster sessions took place in a picturesque setting with a vine frame, providing researchers with the opportunity to engage in discussions during coffee breaks and dedicated poster sessions.



Figure 2: Poster session

3. Seaside Special Interest Group (SIG) Discussions: Over four days, participants engaged in discussions on four thematic subjects by the seaside, which included topics like “International initiatives around subduction zones”, “Open science and publishing”, “Directions to take to monitor subduction margins”, “How can we reconcile geologic and geophysical observations?”. These discussions took place against the backdrop of the sea.



Figure 3: Seaside discussion

4. Hands-on Tutorials (continued): Participants had the opportunity to choose from a selection of themes aligned with their interests. In these tutorials, experts provided step-by-step instructions in specific technical areas. The available options included:

A Deep learning for earthquake detection and phase picking with SeisBench

B Analysis of GNSS time series through trajectory model with ITSA

C DAS data analysis

Conclusion:

This exquisite island offers us the opportunity to immerse ourselves in our research while basking in delightful weather and serene ocean views. The Cargèse 2023 School on Subduction Zone Processes significantly deepened my understanding of these complex geological phenomena. I had the privilege of engaging in enriching discussions and receiving valuable suggestions from fellow participants, thanks to the diverse gathering of 102 attendees over the course of five days. The event also featured enjoyable moments, such as barbecue and coffee breaks, fostering a sense of camaraderie among participants.



Figure 4: Barbecue time