



The IRN CROCO-SUD, in partnership with Jennifer Veitch of the University of Cape Town (UCT) and of the South African Environmental Observation Network (SAEON), as well as various laboratories in France and Chile, organized a two-week summer school in Cape Town, South Africa, from November 25 to December 6, 2024. The first week was dedicated to introductory courses in regional ocean modeling, while the second week offered sessions on more advanced activities focusing either on the coupling between Ocean and Atmosphere, or on the coupling between Marine Biogeochemistry and ocean dynamics. The summer school was hosted by the Centre for High Performance Computing (CHPC) in South Africa, giving us access to their computing resources.



Students and instructors at the CROCO-Sud summer school introductory courses

All courses will soon be available online on the CROCO (<https://www.croco-ocean.org/>) and CROCO-Sud (<https://gdri-croco.cnrs.fr/>) websites.

For the first week, out of around 100 applications, 24 students were selected to take part in the face-to-face summer school. The students came from various national and international institutes, including 17 from South Africa (SAEON, UCT, UKZN and CPUT), 2 from Mozambique (Eduardo Mondlane University), 2 from France and overseas (LACy and LOPS), 1 from Senegal (Assane Seck University, Ziguinchor), 1 from Cameroon working in China (University of the Chinese Academy of Sciences) and 1 from Brazil (in collaboration with the BRICS+ network). Classes and tutorials were given by S. Illig (LEGOS), J. Veitch (SAEON), G. Morvan (LEGOS), R. Benshila (LEGOS), C. Ethé (LOCEAN), R. Person (LOCEAN), P. Penven (LOPS), F. Desbiolles (LEGOS) and L. Renault (LEGOS). The students were thus able to develop their own configurations of the CROCO ocean model over the region of their choice and test different ways of forcing the model, ranging from climatological state to inter-annual variability, as well as downscaling.

The second week was dedicated to CROCO's advanced options: coupling with the PISCES model and ocean-atmosphere coupling (WRF and Toy-model).



Speakers and discussions in the Patio on students' objectives

The courses were divided into a theoretical part, with presentations by the lecturers, and a practical part, with tutorials. On the Ocean-Atmosphere side, students were able to get to grips

with the WRF model, then couple it step by step (using “toy” models) to the CROCO model. Each student was thus able to develop his or her own coupled ocean-atmosphere configuration. On the marine biogeochemistry side, students were able to test the PISCES model in a default configuration (Benguela upwelling region), carry out sensitivity experiments and tackle the methodology for using the CROCO-PISCES coupled model in a research context during a small-group “Scientific Questions” session. Finally, the students set up the CROCO-PISCES model on the region of their choice and carried out sensitivity tests by changing certain PISCES parameters or increasing the resolution of their domain.



At the end of each week, the students presented their work, conclusions and perspectives, and received their CROCO-Sud

Students receiving their certificates

summer school certificates. In order to evaluate the summer school, students were invited to answer a questionnaire to give their point of

view on our teachings.

Next Summer School in Chile in January with a CROCO summer school supported by UNESCO (virtual and on-site), then in Mexico in February 2025 at CICESE. For further information, please contact L. Renault (lionel.renault@ird.fr).



A quick hello from the Lecturers on Shark Beach!