

High-Resolution Atmospheric Models for Regional Applications: a RegCM and WRF Advanced School



30 October - 3 November 2023
An ICTP Meeting
Kigali, Rwanda

Further information:
<http://indico.ictp.it/event/10207/>
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High impact weather events (HIWEs) strongly affect society with devastating effects on agriculture, infrastructures and human lives. This is particularly true in regions of the world which lack up-to-date and dense weather observational networks, powerful computational tools and efficient early warning systems, such as sub-Saharan Africa. HIWEs are often characterized by relatively small-scale and complex atmospheric dynamical features, which make them hard to forecast with mesoscale numerical weather prediction (NWP) models. The use of cloud-resolving NWP configurations (with horizontal grid spacing 1-5 km) for operational and research-oriented activities have proven to be effective in producing more skilful forecasts, benefiting the entire society. High resolution numerical models can also be employed in idealized experiments to understand relevant atmospheric processes. The Weather Research and Forecasting (WRF) model and the Regional Climate Model (RegCM) system are two state-of-the-art atmospheric models capable of cloud-resolving configurations. The aim of this advanced school is to train a diverse group of young motivated researchers in using high resolution NWP models for either research-oriented or applied activities.

Description:

- 1) The first part of the training will be composed of a set of online lectures to introduce the numerical models. The fundamental principles of atmospheric numerical modeling will be covered including (and not limited to):
 - equations of motion
 - numerical schemes
 - parameterizations
 - choice of the numerical grid
- 2) The second part will be organized in presence. It will consist of five days of lectures and hands-on sessions in which two groups will focus on the set up and running of numerical simulations either with WRF or with RegCM. The school will cover:
 - the introduction to the models architecture
 - the explanation of how the relevant model parameters can be modified to perform either a realistic or an idealized simulation
 - hands on session covering all steps needed to perform a simulation from the beginning to the end
 - examples of post-processing analyses using different tools (e.g. CDO, Python, Ferret)

How to apply:

Online application:
<http://indico.ictp.it/event/10207/>

Female scientists are encouraged to apply.

Grants:

A limited number of grants are available to support the attendance of selected participants, with priority given to participants from developing countries. There is no registration fee.

Directors:

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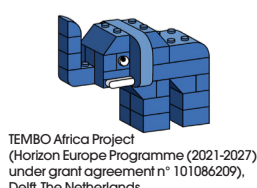
Deadlines:

30 June 2023

For applicants requesting financial and/or visa support

31 July 2023

For all other applicants



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