2nd CIMAs Workshop, CIMAs-II

Climate research initiative for Iberian Mountain Areas

October 2nd-4th, 2024.

Agencia Estatal de Meteorología

Universidad Complutense de Madrid

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Convened by

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1. Statement

CIMAs (Climate research Initiative for iberian Mountain Areas) is a project focused on the analysis of climate in mountain environments and the impact of climate change on these areas. CIMAs is a cooperation initiative between the Spanish Meteorological Agency (AEMET[1]) and the Complutense University of Madrid (UCM[2]), with other institutions (e.g. CIEMAT[3], IGEO[4]) that are also involved. The purpose of CIMAs is to establish cooperation links with other groups under this frame to enhance the achievement of its scientific objectives.

CIMAs focuses on the Central System of the Iberian Peninsula and the surrounding lowland areas. Simulations with the WRF model will be employed, using high horizontal resolutions of at least 1 km, but indeed higher resolutions are targeted. This effort involves challenges related to the realism of modelling in complex terrain/mountain environments, like convection, simulation of snow cover, etc.

In order to evaluate the realism of the simulations, CIMAs incorporates observational data from monitoring stations over the domain of interest. The data are provided by AEMET with contributions from other sources like the Duero and Tajo SAIHs[5] (Sistema Automático de Información Hidrológica), GuMNet[6] (Guadarrama Monitoring Network) over the Sierra de Guadarrama, as well as the IPMA[7] (Instituto Português do Mar e da Atmosfera) and the SNIRH[8] (Sistema Nacional de Informação de Recursos Hídricos) in Portugal. Therefore, one challenge in this field is to integrate different observational systems oriented to one purpose. The main target elements were initially temperature and precipitation, but other values like surface wind and snow became of interest during the initial states of development of the project.

Finally, CIMAs wants to contribute to the understanding and broader public visibility of mountain systems, their sensitivity to climate change and to the diffusion of the science focused on them. For this purpose CIMAs will develop an annual workshop to promote networking, visibility and outreach of research on mountain climate and the effects of

[1] https://www.aemet.es/es/portada
[2] https://www.ucm.es/
[3] https://www.ciemat.es/
[4] https://igeo.ucm-csic.es/
[5] https://www.miteco.gob.es/es/agua/temas/evaluacion-de-los-recursos-hidricos/saih.html
[6] https://www.ucm.es/gumnet
[7] https://www.ipma.pt/pt/index.html
[8] https://snirh.apambiente.pt/

climate change. These objectives are aligned within the frame of the PNACC2[9] (Plan Nacional de Adaptación al Cambio Climático 2).

2. Objective of the workshop

The CIMAs consortium addresses modelling, building up observational datasets, and model-data comparison. The objective of CIMAs-I during 28th-30th June 2023 was helping to identify current challenges in these areas, identify potential problems in our current modelling and observational approaches and help reshaping tasks by learning from the experience and the discussions with the colleagues attending the workshop. The target of CIMAs II will be twofold: to deepen in our discussion of problems related to modelling over complex terrain (resolution, convection, model-data comparison, etc); and to identify potential stakeholders for hum the products and results of the project may be of relevance if conveniently adapted to their needs.

The CIMAs workshops aim at addressing some target topics combining informative lectures and group discussions in an atmosphere of collaboration: challenges in modelling related to increasing spatial resolution towards the kilometre scale and beyond and the problems in the simulation of mountain environments, the challenge of having representative observations blended from different sources and discussing strategies for model-data comparison. Therefore, specific discussions about convection permitting schemes, snow and land surface modelling, sensitivity or modelling of hydrological resources, forest fires and other sensitive issues have been included. We are aware that important issues are missing, and thus, initially unplanned contributions and discussion that may be found relevant, are welcome.

The workshop aims at facilitating easy-going dialogue and collaboration oriented to participants exploring innovative strategies and approaches to address the challenges posed by climate change in mountain areas.

Lastly, CIMA-II also aims at contributing to the awareness among the general public about the importance of mountain environments in a climate change context by incorporating an outreach event. This year's topic will be focused on climate change and fires.

Overall, the workshop provides a platform for in-depth scientific discussions, collaboration and knowledge dissemination, with the ultimate goal of fostering a better understanding of climate change impacts on mountain regions and inspiring proactive responses to safeguard these invaluable regions.

[9] https://www.miteco.gob.es/es/cambio-climatico/temas/impactos-vulnerabilidad-y-adaptacion/plan-nacional-adaptacion-cambio-climatico.html

3. Talks and group dynamics

The workshop is scheduled in two and a half days including talks and working group dynamics. Three Long Talks (LTs, Tables 1-3) are included in 1.5 h blocks and address regional modelling in Cordex regarding CPSs, land surface influences, the problems faced when using very high resolutions, snow modelling and the relevance of these issues within the PNACC2. A specific focus on fire occurrence is promoted in this edition. Additionally emphasis is placed on identifying the needs of potential end users. These talks can take about 45 min or more if needed by the speaker or required by the discussion and ample time is available to expand it to smaller group discussions towards coffee or lunch breaks.

Shorter Talks (STs, Tables 1-3) share 1.5 h blocks and address work in development by the CIMAs group and other colleagues that can be placed in the context of the LTs. The aim is to discuss current problems and activities, identify potential errors/solutions or areas of improvement in the work being developed. These discussions should feed the working group (WG) blocks (Table 1), aimed at a more systematic discussion of the challenges. A final WG session will take place at the end of the meeting with presentations reflecting on the synthesis of what has been learned through the discussions.

4. Venue

The Real Academia de Ciencias Exactas, Físicas y Naturales[10] (RAC) is the venue for the workshop. It provides an ideal setting for scientific exchange, and it is in the very centre of Madrid. This historic institution has been a hub for scientific gatherings since its official establishment in 1847. The majestic architecture and rich heritage of the RAC create an inspiring atmosphere that encourages creativity and critical thinking. It is well-equipped with conference facilities.

The location of the RAC is ***here***.

5. Lunch and dinner

Lunch will take place at local restaurants near the venue. Coffee breaks will be served in the venue. We will arrange group dinners Tuesday, Wednesday and Thursday. Please fill up your availability in Table 5. If you have any food preferences or constraints, let us know by sending an email to Cristina Vegas and Fidel (see Table 2).

[10] https://rac.es/

6. Traveling organization and accommodation

The organization of travel arrangements for invited participants is managed through a user-friendly online platform provided by the UCM[11]. A request form was filled for the guests, providing their personal information and travel preferences. This process ensures that individual needs and preferences are taken into account when making travel arrangements.

Guests will be staying at the Opera Rooms[12], in the centre of Madrid, just a 15 minutes-long walk away from the workshop venue.

Contact: Vegas, C (see Table 2).

7. Outreach activities

An outreach event will be organized on Thursday 3rd October at ??:00 (see Table 1). This will be a round table including several well known guests (Table 4) that will discuss about fire occurrence of forest fires, megafires and climate change. See advert in Figure 1.

[11] https://www.ucm.es/formulario-servicios-de-viaje
[12] https://www.operarooms.com/es

Figure 1. *Advert for the outreach event, 'Cambio climático: hablemos de incendios forestales'*

Table 1. *Scheme of the workshop. Blocks identify longer talks (LT) and shorter talks (ST). All talks are by invitation. WGs indicate working group sessions. An outreach event will take place on the 3rd of October, at ??:00. See Sections 2 and 3.*

	October 2nd	October 3rd	October 4th
9:00			
9:30	ST0 ST1	LT2	LT3
10:00			
10:30			
11:00	Coffee break	Coffee break	Coffee break
11:30	LTI	ST5	WG synthesis
12:00			
12:30		ST6	
13:00	Lunch	Lunch	Lunch
13:30			
14:00	ST2	ST7	
14:30	ST3		
15:00	ST4	ST8	
15:30	Coffee break	Coffee break	
16:00	Continuation of discussion + WGs	WGs	
16:30			
17:00			
17:30			
18:00			
18:30		18:15-20:00 h Outreach event	
19:00			
19:30			
20:00			
20:30			
21:00	Dinner	Dinner	
…			

Table 2. *Workshop participants.*

	Name	Institution	email	Comment
1	Atauri, J.	FunGoBe	jose.atauri@redeuroparc.org	
2	Benito, Gerardo	MNCN	benito@mncn.csic.es	
3	Cardoso Tavares, Rita M.	Univ. Lisboa	rmcardoso@ciencias.ulisboa.pt	
4	García Bustamante, Elena	CIEMAT	elgarcia@ucm.es	
5	García Pereira, Félix	UCM-IGEO	felgar03@ucm.es	
6	González Rouco, J. Fidel	UCM-IGEO	fidelgr@ucm.es	
7	Greciano Zamorano, Emilio	AEMET	emiliogr@ucm.es	
8	Heras Hernández, Paco	OECC	fjheras@miteco.es	
9	Hernanz Lázaro, Alfonso	AEMET	ahernanzl@aemet.es	
10	Luna Rico, Yolanda	AEMET	mlunar@aemet.es	
11	Madera, Sara	CIEMAT	saramade@ucm.es	
12	Meabe Yanguas, Nagore	UCM-IGEO	nmeabe@ucm.es	
13	Montoya, Marisa	UCM-IGEO	mmontoya@ucm.es	
14	Moreno, José Manuel	UCLM	JoseM.Moreno@uclm.es	
15	Múgica, M.	FunGoBe	marta.mugica@redeuroparc.org	
16	Navarro Montesinos, Jorge	CIEMAT	jorge.navarro@ciemat.es	
17	Rodríguez Camino, Ernesto	AME	ernestorodriguezcamino@gmail.com	
18	Rodríguez Guisado, Esteban	AEMET	erodriguezg@aemet.es	
19	Rodríguez O., María José	AEMET	becas2022_proy13@aemet.es	
20	Romero Fresneda, Ramiro	AEMET	rromerof@aemet.es	
21	Salazar, L. Laura	FIC/Meteogrid	leydi.laura@meteogrid.com	
22	Sánchez Perrino, J. Carlos	AEMET	jsanchezp@aemet.es	
23	Tejedor, Ernesto	MNCN	ernesto.tejedor@mncn.csic.es	
24	Torres, Luis	Meteogrid	luis@meteogrid.com	
25	Vegas Cañas, Cristina	CSIC	cvegas@ucm.es	

Table 3. *Key for talks See Table 1 for personal details of speaker*

Talks	Title (tentative)	Speaker
ST0	Institutional Introduction of the Workshop	AEMET
ST1	Presentation, workshop objectives. State of CIMAs	F. González Rouco
LTI	Regional modelling in CORDEX.	R. Cardoso
ST2	Precipitation modelling and model-data comparison	E. Greciano
ST3	Modelling activities related to CIMAs	J. C. Sánchez Perrino
ST4	Climate variability, precipitation and floods	G. Benito/ E. Tejedor
LT2	Wildfires: relevant climatic information	J. Manuel Moreno
ST5	AEMET operational indicators of fire risks	R. Romero
ST6	Modelling of forest fires. Scenarios at regional scales	R. Cardoso
ST7	Information for managers of protected areas	M Múgica/J. Atauri
ST8	The challenge of climate products	E. Rodríguez
LT3	PNACC2 and climatic services	P. Heras

Table 4. *Participants in the outreach event: '' Cambio climático e incendios forestales'.*

	Name	Institution	email
1	Rodríguez Camino, Ernesto	AME	ernestorodriguezcamino@gmail.com
2	José Manuel Moreno	RAC, UCLM	JoseM.Moreno@uclm.es
3	Valladares, Fernando	CSIC, URJC	valladares@ccma.csic.es
4	Cardoso Tavares, Rita M.	Univ. Lisboa	rmcardoso@ciencias.ulisboa.pt
5	Rodríguez Guisado, Esteban	AEMET	erodriguezg@aemet.es

Table 5. *Timeline of workshop attendance. Needed for the organization of working groups, coffee breaks, lunch and dinner.*

	Name	Tue. 1st Evn. (dinner)	Wed. 2nd Morn.	Wed. 2nd Aftern.	Wed. 2nd Evn. (dinner)	Thu. 3rd Morn.	Thu. 3rd Aftern.	Thu. 3rd Evn. (dinner)	Fri. 4th Morn.	Fri. 4th Aftern. (lunch)
1	Atauri, J.					x	x			
2	Benito, G.		x							
3	Cardoso, R.	x	x	x	x	x	x	x	x	x
4	García B., E.			x			x	x	x	x
5	García P., F.		x	x	x	x	x	x	x	x
6	González R., F.	x	x	x	x	x	x	x	x	x
7	Greciano, E.		x	x	x	x	x		x	x
8	Heras, P.									
9	Hernanz L., A.					x	x		x	
10	Luna R., Y.									
11	Madera, S.		x	x		x	x		x	x
12	Meabe, N.		x	x		x	x	x	x	x
13	Montoya, M.						x	x		
14	Moreno, J. M.					x	x			
15	Múgica, M.		x				x			
16	Navarro M., J.		x	x	x	x	x	x	x	x
17	Rodríguez C., E.	x	x	x	x	x	x	x	x	x
18	Rodríguez G., E.		x	x	x	x	x	x	x	x
19	Rodríguez O, M.J.		x	x		x	x		x	x
20	Romero, R.					x	x			
21	Salazar, L. L.		x	x		x	x	x	x	x
22	Sánchez P., J.C.		x	x	x					
23	Tejedor, E.		x	x		x	x	x		
24	Torres Luis							x	x	x
25	Vegas C., C.	x	x	x		x	x	x	x	x