3rd CIMAs Workshop, CIMAs-III

Climate research initiative for Iberian Mountain Areas

October 8th-10th, 2025.

Agencia Estatal de Meteorología

Universidad Complutense de Madrid

Instituto de Geociencias (UCM-CSIC)

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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]), including additional 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 regional models (e.g. WRF, HCLIM) are employed, using high horizontal resolutions of at least 1 km, although 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 stages of development of the project.

Additionally, 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 climate change.

[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/

Specifically, one of the purposes of CIMAs is to develop products that are useful, services oriented, for different types of end users. The target is to develop such products in a co-production strategy that can ensure that knowledge/information/data can be transferred in a trust-based relationship between developers and end users. Co-production consists in co-designing, co-developing and co-delivering research with stakeholders, which ensures that the information needs of end users are understood by researchers, and the type and form of the knowledge generated by researchers aligns with such needs. Such a process requires awareness of the different characteristics of the participants and workshops are a useful framework for building up such a common frame.

These objectives and procedures of CIMAs 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 objectives of CIMAs-I and CIMAs-II were 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 III will be twofold: to deepen in our discussion of problems related to modelling over complex terrain (resolution, convection, model-data comparison, etc); and to develop jointly common plans with potential stakeholders that can be interested in the co–production of useful end-user products.

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. Also, the potential for identifying products that stand beyond what can be directly simulated by climate models, but nevertheless opportunities for developing them can be identified in a co-production framework. 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

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

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, CIMAs-III 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 wildfires.

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.

3. Talks and group dynamics

The workshop is scheduled in two and a half days including talks and working group dynamics. Talks (Tns, 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 or fire modelling and the relevance of these issues within the PNACC2. A specific focus on wildfire occurrence is promoted in this edition. Additionally emphasis is placed on identifying the needs of potential end users. Longer 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 (Tables 1-3) are also accommodated and 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 longer talks. 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).

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 SmartRental Gran Via 47[12], in the centre of Madrid, just a 10 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 9th October at 18:00 (see Table 1). This will be a round table including several well known guests (Table 4) that will discuss wildfires occurrence, megafires and climate change. See advert in Figure 1.

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

Figure 1. *Advert for the outreach event* ***'Incendios y cambio climático: entender los riesgos para proteger nuestro futuro'***

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 9th of October, at 18:15. See Sections 2 and 3.*

	October 8th	October 9th	October 10th
9:00			
9:30	Opening	T2.1	T3.1
10:00			
10:30	T1.1	T2.2	
11:00	Coffee break	Coffee break	Coffee break
11:30	T1.2	T2.3	Final Synthesis
12:00			
12:30		T2.4	
13:00	Lunch	Lunch	Lunch
13:30			
14:00	T1.3	(Buffer)	
14:30		T2.5	
15:00	T1.4		
15:30	Coffee break	Coffee break	
16:00	T1.5	T2.6	
16:30	T1.6		
17:00	T1.7		
17:30	Final discussion and wrap up	Final discussion and wrap up	
18:00			
18:30		18:15-20:00 h	
19:00		Outreach event	
19:30			
20:00			
20:30			
21:00	Dinner	Dinner	
…			

Table 2. *Workshop participants.*

	Name	Institution	email	Comment
1	Barranco Sanz, Luis Miguel	CEDEX	Luis.M.Barranco@cedex.es	
2	Berzal Martinez, Adrián	CEIGRAM-UPM	adrian.bmartinez@upm.es	
3	Cardoso dos Santos, Luana	IDL/CIEMAT	lssantos@ciencias.ulisboa.pt	
4	Cardoso Tavares, Rita M.	IDL-FCUL	rmcardoso@ciencias.ulisboa.pt	
5	Chuvieco Salinero, Emilio	UAH	emilio.chuvieco@uah.es	
6	Fernández Muñoz, Ana I.	CEDEX	Ana.I.Fernandez@cedex.es	
7	Gallego Castillo, Cristóbal J.	UPM	cristobaljose.gallego@upm.es	
8	García Bustamante, Elena	CIEMAT	elgarcia@ucm.es	
9	García Pereira, Félix	UCM-IGEO	felgar03@ucm.es	
10	González Rouco, J. Fidel	UCM-IGEO	fidelgr@ucm.es	
11	Greciano Zamorano, Emilio	AEMET	emiliogr@ucm.es	
12	Gutiérrez Fernández, Jesus	Tragsa	jesgut01@gmail.com	
13	Hernanz Lázaro, Alfonso	AEMET	ahernanzl@aemet.es	
14	Jiménez Muñoz, Pedro Ángel	NCAR	jimenez@ucar.edu	
15	Luna Rico, Yolanda	AEMET	mlunar@aemet.es	
16	Luque Merelo, Esperanza	CEIGRAM-UPM	esperanza.luque@upm.es	
17	Madera Sánchez, Sara	CIEMAT	saramade@ucm.es	
18	Martín Sotoca, Juan José	CEIGRAM-UPM	juan.martin.sotoca@upm.es	
19	Meabe Yanguas, Nagore	UCM-IGEO	nmeabe@ucm.es	
20	Montoya, Marisa	UCM-IGEO	mmontoya@ucm.es	
21	Navarro Montesinos, Jorge	CIEMAT	jorge.navarro@ciemat.es	
22	Rodríguez Camino, Ernesto	AME	ernestorodriguezcamino@gmail.com	
23	Rodríguez Guisado, Esteban	AEMET	erodriguezg@aemet.es	
24	Parodi Perdomo, José Antonio	AEMET	Jparodip@aemet.es	
25	Postigo González, María	AEMET	mpostigog@aemet.es	
26	Sánchez Bajo, Mónica	OECC	msbajo@miteco.es	
27	Sánchez Perrino, J. Carlos	AEMET	jsanchezp@aemet.es	
28	Vegas Cañas, Cristina	UCM-IGEO	cvegas@ucm.es	

Table 3. *Key for talks (see Table 1 for personal details of speaker).*

Talks	Title (tentative)	Speaker
Opening	Institutional Introduction of the Workshop	AEMET, UCM
T1.1	Presentation, workshop objectives. State of CIMAs	JFGR, ERG, ERC
T1.2	Regional modelling in Cordex/LUCAS: LULC and wildfires	R. Cardoso, L. Santos
T1.3	HCLIM: Land surface modelling and CIMAS set up	J. C. Sánchez, I. Prieto Rico
T1.4	A few notes on weather simulation requirements for energy system modelling	C. Gallego Castillo
T1.5	CIMAs observational datasets	C. Vegas
T1.6	Model-data comparison: temperature	S. Madera
T1.7	Model-data comparison: precipitation. Design of production runs	J. Navarro, J. C. Sánchez, I. Prieto Rico, JFGR
T2.1	Remote sensing and wildfires	E. Chuvieco
T2.2	Wildfire danger indices	M. Postigo
T2.3	Impact of climate change on grasslands in central Spain	J.J. Martín
T2.4	Water resources. Hydrological modelling.	L. Barranco, A. I. Fernández
T2.5	Wildland fire behavior modeling at NCAR's Research Applications Laboratory	P. Jiménez Muñoz
T2.6	PNACC2 and climatic services	M. Sánchez
T3.1	The challenge of climate products. Climate services	E. Rodríguez G., E. Rodríguez C.

Table 4. *Participants in the outreach event:* ***'Incendios y cambio climático: entender los riesgos para proteger nuestro futuro'.***

	Name	Institution	email
1	Rodríguez Camino, Ernesto	AME	ernestorodriguezcamino@gmail.com
2	Chuvieco Salinero, Emilio	RAC, UAH	emilio.chuvieco@uah.es
3	Cardoso Tavares, Rita M.	Univ. Lisboa	rmcardoso@ciencias.ulisboa.pt
4	Postigo González, María	AEMET	mpostigog@aemet.es
5	Rodríguez Guisado, Esteban	AEMET	erodriguezg@aemet.es

Table 5. *Timeline of workshop attendance. Needed for the organization of coffee breaks, lunches and dinners.*

	Name	Tue. 7th Evn. (dinner)	Wed. 8th Morn.	Wed. 8th Aftern.	Wed. 8th Evn. (dinner)	Thu. 9th Morn.	Thu. 9th Aftern.	Thu. 9th Evn. (dinner)	Fri. 10th Morn.	Fri. 10th Aftern. (lunch)
1	Barranco, L. M.		x	x		x			x	
2	Berzal, Adrián					x	x	x		
3	Cardoso d.S., L.	x	x	x	x	x	x	x	x	x
4	Cardoso T., R.	x	x	x	x	x	x	x	x	x
5	Chuvieco, E.					X	x	X	X	
7	Gallego C., C.		x	x						
8	García B., E.									
9	García P., F.	x	x	x		x	x	x	x	
10	González R., F.	x	x	x	x	x	x	x	x	x
11	Greciano, E.		x			x	x			
12	Gutiérrez F., J.					x	x			
13	Hernanz L., A.		x	x		x	x		x	x
14	Luna R., Y.							3		
15	Luque M., E.					x	x	x		
16	Madera, S.	x	x	x	x	x	x	x	x	x
17	Martin S., J. J.					x	x			
18	Meabe, N.	x	x	x		x	x		x	x
19	Montoya, M.									
20	Navarro M., J.		x	x	x	x	x	x	x	x
21	Rodríguez C., E.		x	x		x	x	x	x	
22	Rodríguez G., E.		x	x	x	x	x	x	x	x
23	Parodi P., J. A.		x	x		x	x		x	x
24	Postigo, M.		x	x		x	x		x	
25	Sánchez B., M.									
26	Sánchez P., J.C.		x	x		x	x			
27	Vegas C., C.	x	x	x	x	x	x	x	x	x
	Total	**7**	**16**	**15**	**7**	**20**	**19**	**15**	**15**	**10**