



Computing challenges

<https://comcha.es/>

4th COMCHA School

Training scientific researchers on
advanced computing technologies

Zaragoza
8 - 15 April 2026



indico.capa.unizar.es/event/42/

www.comcha.es

Contact: hgomez@unizar.es

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Centro de Astropartículas y
Física de Altas Energías
Universidad Zaragoza



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Arantza Oyanguren, Luca Fiorini (IFIC-Valencia)

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Bios



4th COMCHA School

Name: Antonio Ramirez de Arellano Marrero Degree/area of specialization: PhD in Computer Science Present institute/center: University of Seville Technical skills: Python, Natural Computing, Artificial Intelligence Research interests: Theory and Applications of Unconventional Computing paradigms Current project: Virus Machines and Artificial Intelligence Brief bio: BSc and MSc in Mathematics at the University of Seville (USE), PhD in Computer Science at the same university and former Marie Curie postdoc fellow. Currently, I am an assistant professor at the USE. Media contact: aramirozdearellano@us.es https://www.linkedin.com/in/antonio-ramirez-de-arellano-marrero	Name: Nadja Lessing Degree/area of specialization: PhD in Particle Physics Present institute/center: IFIC, University of Valencia Technical skills: Python, BDTs, some C++ Research interests: Data analysis in general Current project: Neutrino oscillations, beyond Standard Model searches in experimental physics, statistical analysis. Brief bio: BSc and MSc in Physics at the Friedrich Alexander Universität Erlangen, PhD in Physics at IFIC (ending September 2026). Media contact: nadja.n.lessing@gmail.com https://www.linkedin.com/in/nadja-lessing-731b273a0/
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Marshmallow Challenge



Saturday at 9am!

4th COMCHA School



CAPA
Zaragoza



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Very ambitious programme

	Wed. 8	Th. 9	Fr. 10	Sat. 11	Su. 12	Mo. 13	Tu. 14	Wed. 15
9:00	Opening (20') A new computing era (30') Veronika Chobanova (UdC)	ML fundamentals with hands (2/3) Felipe Luan Souza de Almeida (UB)	Optimized Programming (1/2) (withs Hands) Jiahui Zhuo (IFIC)	Hands on FPGA (3/3.5) Álvaro Navarro (CIEMAT)		Topical Lecture (50') Foundation Models Lorenzo Moneta (CERN)	Offline Computing (1/2) Emma Torró (IFIC)	Topical Lecture (50') ML for Rare Event Searches Ivan Coarasa (CAPA)
9:50	Topical Lecture (50') Agustina infrastructure: Fostering scientific research with High Performance Computing Sergio Martínez (BIFI)	Hands on ML (3/3) Felipe Luan Souza de Almeida (UB)	Optimized Programming (2/2) (withs Hands) Jiahui Zhuo (IFIC)			Real Time Analysis (RTA) (1/2) Carla Marín (UB)	Topical Lecture (50') AI for applied science Pablo Martínez Ruiz del Árbol (IFCA)	Simulations (1/2) Carlos Vico (Rice University)
10:40				Differential Programming (1/2.5) Pietro Vischia (ICTEA)				
11:10	Topical Lecture (50') Distributed Computing Gonzalo Merino (PIC)	Topical Lecture (50') Perspectives on Building Research Software for High Energy Physics Experiments David Lange (Princeton University)	FPGA Programming (1/3.5) Álvaro Navarro (CIEMAT)	Hands on diff. programming (1.5/2.5) Pietro Vischia (ICTEA)		LLMs (1/2) Clicia Uzziel Perez (URL)	Hands on offline (2/2) Emma Torró (IFIC)	Simulations (2/2) Carlos Vico (Rice University)
12:00	Artemisa (1/2) Jose E. García Navarro (IFIC)	GPU Programming (3/7) Miguel Ángel Martínez del Amor (US)	FPGA Programming (2/3.5) Álvaro Navarro (CIEMAT)		Hands on LLMs (2/2) Clicia Uzziel Perez (URL)	Modern Bayesian Inference (1/2.5) Bryan Zaldivar (IFIC)		Light talks (30') Closure
13:00	Lunch	Lunch	Lunch		Lunch	Lunch		
14:30	ML fundamentals (1/3) Felipe Luan Souza de Almeida (UB)	Hands on GPU Programming (4/7) Miguel Ángel Martínez del Amor (US)	Advanced AI in HEP (1/2) David Rousseau (IJCLab)		Hands on RTA (2/2) Carla Marín (UB)	ML for global fits (1/2) Jorge Alda (CAPA)		
15:20	GPU Programming (1/7) Miguel Ángel Martínez del Amor (US)	Hands on GPU Programming (5/7) Miguel Ángel Martínez del Amor (US)	Advanced AI in HEP (2/2) David Rousseau (IJCLab)		Quantum Computing (1/2) Miriam Lucio (IFIC)	Tools: ML for global fits (2/2) Jorge Alda (CAPA)		
16:10				16:15 Visit Aljaferia (15:45) 26 pax max per visit				
	Hands on Setup IFIC	Hands on GPU Programming (6/7) Miguel Ángel Martínez del Amor (US)	Topical Lecture (50') AI in the industry José Juste Pallarés (BSH España)		Hands on Quantum (2/2.5) Miriam Lucio (IFIC)	Modern Bayesian Inference (2/2.5) (with Hands) Bryan Zaldivar (IFIC)		
17:10	Hands on Artemisa (2/2) IFIC	Hands on GPU Programming (7/7) Miguel Ángel Martínez del Amor (US)	Topical Lecture 10 (50') Lattice QCD A. Vaquero (CAPA)					
18:10	GPU Programming (2/7) Miguel Ángel Martínez del Amor (US)							
18:30								
19:00								

Please fill the feedback form: <https://forms.gle/BEBFHXdksEKypvpp6>

COMCHA network

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Spanish Network on Advanced Computing for Fundamental and Applied Physics

Next events

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Valencia, 17-21 Nov '25

ROOT Workshop

Valencia, 19-21 Nov '25

XVII CPAN Days

Contact us! we have news, jobs, love suggestions and new projects ...

COMCHA network

Executive Board



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Coordinator



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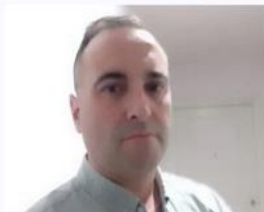
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Daniel Nieto Castaño (UCM)



Martin Borstad Eriksen (IFAE)



Jose Enrique García Navarro (IFIC)



Jose Salt Cairós (IFIC)



Isidro González Caballero (ICTEA)

COMCHA network

- We have annual workshop to share the work and have discussions
- Searching for volunteers (ideally young postdocs) to lead the packages

WP1: Reconstruction & Data Processing

WP2: Simulation & Modeling

WP3: AI Methods

WP4: Computing Platforms & Infrastructure

WP5: Data Management & Analysis

WP6: Emerging Technologies

WP7: Collaboration & Community

- Searching for experts to teach senior people in dedicated subjects

(contact us if you are interested!)

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Some info:

- You will have the certificate available at the end of the week.
- We will provide you with an invoice if you require it (please, send us your data if you didn't do it yet).



Hope to see some of you at CHEP in Thailand!!



<https://indico.cern.ch/event/1471803/overview>