



8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE
 Lecce, CMCC Foundation, Via M. Biagi, 5
 May 22-24, 2024

[Enter Zoom meeting](#)

[Q&A doc](#)

Wednesday, 22 May		
14:00-14:30 h	Registration & Welcome coffee	
14:30-14:40 h	Welcome session	
14:30-14:35 h	Welcome	Italo Epicoco - CMCC, IT
14:35-14:40 h	Workshop introduction and opening remarks	Joachim Biercamp - DKRZ, DE
14:40-18:20 h	Session 1 – European and International Landscape	Chairs: Joachim Biercamp, DKRZ, DE Erwan Raffin, ATOS, FR
14:40-15:05 h	Feasibility study for the next flagshipsupercomputer development and high-resolution climate modelling efforts in Japan	Hisashi Yashiro - NIES, JP <i>in-person attendance</i>
15:05-15:30 h	Jules Verne consortium: toward a French and European Exascale Ambition	Corinne Béal - GENCI, FR <i>in-person attendance</i>
15:30-15:55 h	Latest developments in the DestinE framework	Nils Wedi - ECMWF, EU <i>virtual attendance</i>
15:55-16:20 h	JUPITER - Exascale computing for European climate research	Lars Hoffmann - JSC, EU <i>in-person attendance</i>
16:20-16:40 h	<i>Coffee break</i>	
16:40-17:05 h	Update on E3SM and exascale readiness in the US	Robert Jacob Argonne National Lab, US <i>in-person attendance</i>
17:05-17:30 h	HPC enabled Cyberinfrastructure development for integrated environment modelling and services in India	Akshara Kaginalkar former C-DAC, IN <i>virtual attendance</i>

 	<p>ESiWACE3 has received funding from the European High Performance Computing Joint Undertaking (EuroHPC JU) and the European Union (EU) under grant agreement No 101093054.</p> <p>IS-ENES3 has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 824084.</p>
--	---

**8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE**

Lecce, CMCC Foundation, Via M. Biagi, 5



May 22-24, 2024

17:30-17:55 h	EU chips for HPC: the contribution of the European Processor Initiative & EUPEX	Etienne Walter - Eviden, EU <i>in-person attendance</i>
17:55-18:20 h	High-Resolution Climate Modeling and Prediction in China	Yongqiang Yu - IAP/CAS, Ocean University of China <i>in-person attendance</i>
18:20-18:50 h	General discussion & end of day 1	


Note: time for speakers includes 5 minutes for questions

8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE
 Lecce, CMCC Foundation, Via M. Biagi, 5
 May 22-24, 2024



Thursday, 23 May		
09:00-09:30 h	<i>Welcome coffee</i>	
09:30-13:10 h	Session 2 – Data workflow	Chairs: Uwe Fladrich, SMHI, SE Sandro Fiore, UniTrento, IT
09:30-09:55 h	Innovations in data handling associated with the CANARI large ensemble programme and the UK exascale software programme Excalibur	Bryan Lawrence - NCAS, UK <i>virtual attendance</i>
09:55-10:20 h	ESGF and preparations for CMIP7	David Poulter - UKRI, UK <i>in-person attendance</i>
10:20-10:45 h	Scientific data valorisation on federated, national compute resources in EGI	Gergely Sipos - EGI, EU <i>virtual attendance</i>
10:45-11:10 h	Destination Earth Data Lake - Services & Interaction with HPC sites	Michael Schick EUMETSAT, DE <i>in-person attendance</i>
11:10-11:30 h	<i>Coffee break</i>	
11:30-11:55 h	Certification of Archives	Andrea Lammert -DKRZ, DE <i>virtual attendance</i>
11:55-12:20 h	Metadata Advances in Support of Earth System Modelling	David Hassell - NCAS, UK <i>in-person attendance</i>
12:20-12:45 h	Climate indices for model evaluation and user applications	Lars Bärring - SMHI, SE <i>in-person attendance</i>
12:45-13:10 h	Multi-level provenance management in climate scientific workflows	Sandro Fiore - UniTrento, IT Fabrizio Antonio - CMCC, IT <i>in-person attendance</i>
13:10 -14:10 h	<i>Lunch break</i>	

 	<p>ESiWACE3 has received funding from the European High Performance Computing Joint Undertaking (EuroHPC JU) and the European Union (EU) under grant agreement No 101093054.</p> <p>IS-ENES3 has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 824084.</p>
--	---

**8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE**
Lecce, CMCC Foundation, Via M. Biagi, 5
May 22-24, 2024



14:10-18:30 h	Session 3 – Performance and accelerators <i>In memory of Rupert Ford</i>	Chairs: Mario Acosta, BSC, SP Sophie Valcke, CERFACS, FR
14:10-14:25 h	In memory of Rupert Ford (including one minute of silence)	
14:25-14:50 h	PSyclone: a source-to-source compiler to achieve Fortran performance portability	Sergi Siso - STFC, UK <i>in-person attendance</i>
14:50-15:15 h	Managing I/O performance in LFRic with XIOS	Harry Shepherd - MetOffice, UK <i>in-person attendance</i>
15:15-15:40 h	The Loki source-to-source tool and GPU adaptation at ECMWF	Michael Lange - ECMWF, UK <i>in-person attendance</i>
15:40-16.05 h	Comparison of eddy-permitting, eddy rich and sub-mesoscale permitting global configurations based on NEMO 4.2 OGCM	Clément Bricaud Mercator, FR <i>virtual attendance</i>
16:05-16:25 h	<i>Coffee break</i>	
16:25-16:50 h	Performance optimisation of ultra-high resolution earth system models on GPUs	John Dennis - NCAR, US <i>virtual attendance</i>
16:50-17:15 h	DestinE: DT weather extremes	Piet Termonia Météo-France, FMI, BE <i>virtual attendance</i>
17:15-17:40 h	Destination Earth Climate Adaptation Digital Twin - Technical solution and computational performance	Mario Acosta - BSC, SP <i>in-person attendance</i>
17:40-18:10 h	General discussion & end of day 2	
20:30 h	Social dinner at “La Scarpetta” restaurant	

Note: time for speakers includes 5 minutes for questions

 	<p>ESiWACE3 has received funding from the European High Performance Computing Joint Undertaking (EuroHPC JU) and the European Union (EU) under grant agreement No 101093054.</p> <p>IS-ENES3 has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 824084.</p>
---	---

8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE
 Lecce, CMCC Foundation, Via M. Biagi, 5
 May 22-24, 2024



Friday, 24 May		
09:00-09:30 h	<i>Welcome coffee</i>	
09:30-16:00 h	Session 4 – Machine Learning	Chairs: Giovanni Aloisio, CMCC, IT Peter Dueben, ECMWF, UK
09:30-09:55 h	Understanding and modelling the Earth System with Machine Learning	Veronika Eyring - DLR, DE <i>virtual attendance</i>
09:55-10:20 h	Data-driven weather forecasting at ECMWF	Simon Lang - ECMWF, UK <i>virtual attendance</i>
10:20-10:45 h	Machine Learning for regional high-resolution ensemble forecasting	Laure Raynaud Météo-France, FR <i>virtual attendance</i>
10:45-11:05 h <i>Coffee break</i>		
11:05-11:30 h	End-to-end learning for ocean modelling, monitoring and forecasting	Ronan Fablet IMT Atlantique, FR <i>virtual attendance</i>
11:30-11:55 h	Atmorep	Ilaria Luise - CERN, CH <i>in-person attendance</i>
11:55-12:20 h	Using ChatGPT to Translate and Modernize an Earth System Model from Fortran to Python/JAX	Anthony Zhou Columbia University, US <i>virtual attendance</i>
12:20-12:45 h	PanguWeather	Lingxi Xie Huawei Research, CN <i>virtual attendance</i>
12:45-13:10 h	DiffDA: a diffusion model for weather-scale data assimilation	Langwen Huang - ETH, CH <i>in-person attendance</i>

 	<p>ESiWACE3 has received funding from the European High Performance Computing Joint Undertaking (EuroHPC JU) and the European Union (EU) under grant agreement No 101093054.</p> <p>IS-ENES3 has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 824084.</p>
--	---

**8th ENES HPC Workshop
on “High-resolution climate and weather modelling”
organized by ESIWACE**
Lecce, CMCC Foundation, Via M. Biagi, 5
May 22-24, 2024

13:10-14:30 h	<i>Lunch break</i>	
14:30-14:55 h	Why all emergent constraints are wrong but some are useful - a machine learning perspective	Peer Nowack - KIT, DE <i>in-person attendance</i>
14:55-15:20 h	Improving parameterisation of convective momentum transport through machine learning	Paul O’Gorman - MIT, US <i>virtual attendance</i>
15:30-16:00 h	Closing remarks and end of the workshop	

Note: time for speakers includes 5 minutes for questions

 	<p>ESiWACE3 has received funding from the European High Performance Computing Joint Undertaking (EuroHPC JU) and the European Union (EU) under grant agreement No 101093054.</p> <p>IS-ENES3 has received funding from the European Union’s Horizon 2020 research and innovation programme under grant agreement No 824084.</p>
---	---