ESiWACE3 Newsletter
Issue #2 / October 2023

News

Call for Proposal 2023-2024

Bids for support from the consortium's research engineers continue to flow in response to the first ESiWACE3 Call for Proposals (CfP). The call aims to support the exascale preparations for the European Earth System Models (ESM) community by offering free support and advice on improving model efficiency and readying software to run on existing and near-future hardware architectures.

The call is open to all European ESM developing groups, including atmospheric sciences, oceanography, and climate-related domains such as land or sea ice modelling, land-surface modelling, atmospheric or ocean(bio-)chemistry, etc. The only requirement is that the applicant's institutions be located in one of the countries participating in the EuroHPC Joint Undertaking.

The call closes on **1 November 2023 at 14:00h CET,** and selected projects will begin in February 2024.

Read more [here](#).

SERVICE CATALOGUE

The new catalogue of the services provided by ESiWACE3 to support the European modelling community has just been published. The services, which are free of charge, range from tailored, in-kind advice to engineering time and/or help to implement code modifications. Some examples of engineering and software development services ESiWACE3 might offer during the project are optimising weather and climate model codes, reduced precision for ESM, ESM containerisation, data compression or Domain Specific Languages.

Read [more](#).
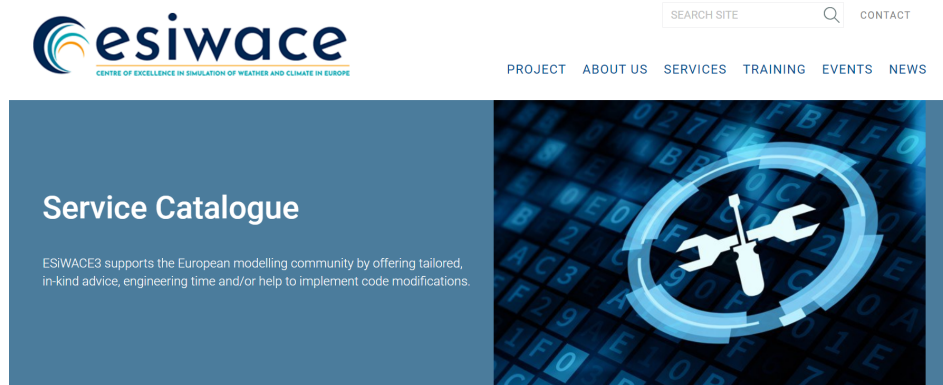
ESiWACE3 at HPC CoE social media accounts

The week of 2 - 6 October 2023, ESiWACE3 will be the featured project on the [HPC CoE](#) [Twitter](#) and [LinkedIn](#) accounts. Conceived and managed by the 2nd phase of the Coordination and Support Action (CSA) [CASTIEL](#), CASTIEL2, the objective of the communication campaign is to introduce to the European community all of the CoEs [launched by the EuroHPC JU](#) (January 2023), with a brief overview of the objectives, partners and services offered by each CoE.

Check the HPC CoE social media accounts to read the ESiWACE3 messages!

ESiWACE3 at the SC23

ESiWACE3 will be present at the [Supercomputing 2023](#) (SC23), under the booth that the EuroHPC JU will have at the event as an exhibitor. For the first time, EuroHPC JU will attend SC, the international conference for High-Performance Computing, networking, storage and analysis, which this year will occur on 12 - 17 November 2023 in Denver (CO, USA). [Brand-new ESiWACE3 audiovisual material](#) presenting the project and the kick-off meeting held in Barcelona at the beginning of the year will be displayed. This material has been produced by ESiWACE3 Consortium partner [Latest Thinking](#).

ESiWACE3 at HiPEAC24

ESiWACE3 will be at HiPEAC 2024, to be held in Munich on 17 - 19 January 2024. Together with the Centre of Excellence (CoE) [HiDALGO2](#), ESiWACE3 will present a workshop titled "[Towards reliable Digital Twin - advancing applications and tools capabilities for Global Challenges](#)", which is scheduled for Wednesday, 17 January, from 14:00 to 17:30 h. The workshop aims to explore synergies between modelling, data acquisition, simulation, data analysis and visualisation and achieving better scalability on current and future HPC and AI infrastructures to deliver highly scalable solutions that can effectively utilise pre-exascale systems.
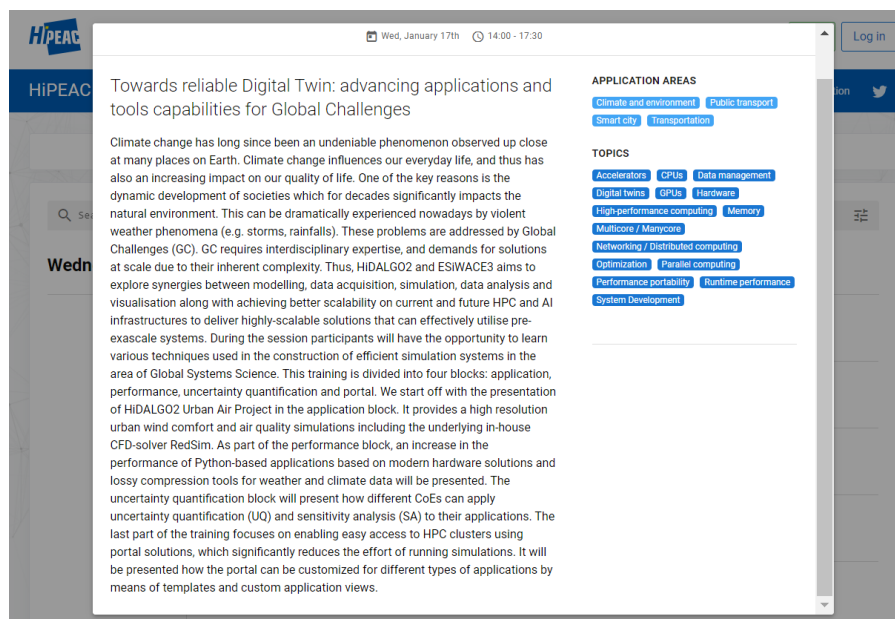
New ESiWACE3 infographics

ESiWACE3 has recently published an infographic to present the project and its top-level objectives concisely and graphically: O1. Increase efficiency of simulations on state-of-the-art supercomputers; O2. Design tools to close technology gaps for HPC; O3. Develop tools to tackle the data challenge of high-resolution models; O4. Support the community in the use of supercomputers via targeted services; O5. Support the community using supercomputers via training and capacity building; and O6. Build a well-connected & inclusive community, and transfer knowledge between European initiatives.

It can be found [here](#) in case somebody wants to use it to promote the project.
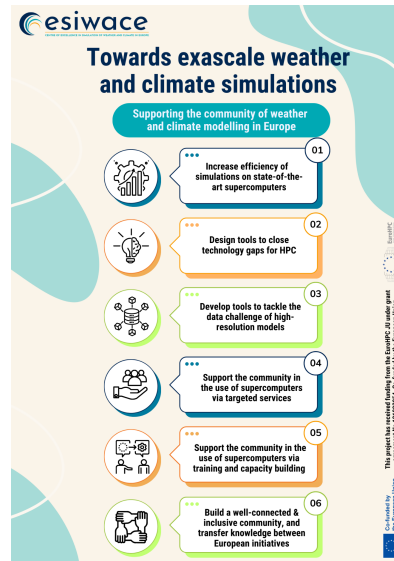
Events

External events

External events in which ESiWACE3 has participated since the last issue of the ESiWACE Newsletter:

- [UIFCW Summer Workshop 2023](#), Boulder (CO, USA), 24-28 July 2023. [Presentation](#).

Updates

Two further ESiWACE3 Deliverables and Milestones have been published during the period M7-M9 (July and September 2023):

Deliverables

- **Deliverable 1.1: Report on co-design requirements**

  D1.1 reports the list of software and hardware requirements needed to run the High-Performance Climate and Weather (HPCW) on novel hardware. The HPCW is a benchmark suite that was started in ESCAP-E2 and ESiWACE2 projects and contains models and mini-applications (called dwarfs) that are key for the weather and climate prediction systems.

  Because of the "sensitive" dissemination level of this deliverable, this document is not available.

- **Deliverable 4.1: Initial release of catalogue of expertise and potential service offer**

D4.1 lists the range of services, in the form of advice and engineering effort, that ESiWACE3 offers to the European weather and climate modelling community to help make numerical weather and climate simulations more efficient and scalable and use of the most powerful supercomputers. The list of service items and services from the previous ESiWACE2 phase constitutes the portfolio of ESiWACE3 and is published on the website.

Read D4.1 here.

News from the neighbours

Introduction to Geospatial Raster and Vector Data with Python

This workshop will introduce a set of tools from the Python ecosystem and show how to use them to perform practical geospatial data analysis. The Netherlands eScience Center organises it and will be held in Amsterdam on 10 and 11 October 2023.

More info here.

Seminar: Climate DT + Quantum?

Can quantum computing aid climate modelling and digital twins of the climate? On 10 Oct 2023, scientists from the CSC-IT Center for Science (Espoo, Finland) will discuss the Climate Change Adaptation Digital Twin (Climate DT) as part of the European Destination Earth initiative and Quantum computers.

More info here.

Parallel Programming Workshop

From 23 to 27 October 2023, a workshop about the fundamental concepts supporting message-passing and shared memory programming models will be held at the Campus Nord of the Universitat Politècnica de Catalunya (Barcelona, Spain). Organised by the Barcelona Supercomputing Center (BSC-CNS), the course will cover the two widely used programming models: MPI for distributed-memory environments and OpenMP for shared-memory architectures.

More info here.

Earth Sciences Simulation Environments course

The Barcelona Supercomputing Center (BSC) Training Course on Earth Sciences Simulation Environments aims to cover the basics of high-performance computing (HPC) environment oriented

towards earth science applications, specifically chemical weather modelling and climate modelling. It will be held online on 30 and 31 October 2023.

More info [here](#).

Supercomputing 2023 - SC 2023

One more year, Denver (CO, USA) will host the [Supercomputing Conference](#) - SC 2023, known as the International Conference for High Performance Computing, Networking, Storage, and Analysis. The event will occur from 12 to 17 November 2023.

More info [here](#).

Introduction to Supercomputing at JSC

Targeted exclusively for users of the Jülich supercomputers, the training course includes theoretical lectures and practical tutorials to put theory into practice. Organised online by the [Jülich Supercomputing Centre](#) (JSC) from 20 to 23 November 2023, the course will cover many topics, from basic log-in procedures to intermediate-level techniques.

More info [here](#).

Getting started with AI on supercomputers

This workshop aims to guide the attendees through the first steps of using High-Performance Computing machines for AI applications. It will be held in small group size to ensure there is enough time space to address all the attendees' requirements. The course, organised by the [Jülich Supercomputing Centre](#) (JSC), will be online, and the dates are still to be confirmed (November 2023).

More info [here](#).

Introduction to Explainable Deep Learning on Supercomputers

The [Jülich Supercomputing Centre](#) (JSC) organises a course to go deep into the Machine Learning models, analysing them employing techniques from Explainable AI to unveil human-interpretable explanations for what they do. It will be held online, and the dates are still to be confirmed (November 2023).

More info [here](#).

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You can also look at the [previous issues](#) of the ESiWACE newsletter.