CLAIMA

AI-based **digital twin platform** for climate

CLAIMA
PRESS RELEASE

AI emulators trained to run climate models for a new generation of AI driven Digital Twins

Horizon Europe project CLAIMA will build a European AI digital twin platform for climate, training AI-based climate models on HPC and AI Factories in Europe. Started on 1 September 2026, the project gathers 11 European partners from six countries.

Bruxelles, 6 October 2026.

CLAIMA (Climate AI Modelling and Analysis), a Horizon Europe project coordinated by the Alfred Wegener Institute, has started work on a European Digital Twin Platform for Climate Modelling driven by artificial intelligence. Schedule until August 2030, it aims to make climate simulations faster and much cheaper to run, and to open them to a far wider community of users, without compromising scientific integrity.

Climate simulations underpin the reports of the Intergovernmental Panel on Climate Change (IPCC), yet research institutions and national agencies have largely run them independently, at high cost and without shared infrastructure. The Coupled Model Intercomparison Project (CMIP) standardised experiment design and data exchange, and Destination Earth (DestinE) placed several models in a common environment as digital twins. AI climate models, leaner and free of decades of legacy code, now offer a chance to go further.

As Nikolay Koldunov explains: **"AI is developing incredibly quickly, and climate science has a real opportunity to benefit from this progress. With CLAIMA, we want to turn these advances into trustworthy and accessible tools that allow us to explore the climate system faster, run experiments that were previously impractical, and ultimately provide better climate information for science and society."** - Nikolay Koldunov, Alfred Wegener Institute, CLAIMA Coordinator.

CLAIMA will adapt and integrate AI emulators of physical climate models alongside deep learning downscaling for ultra high resolution local information. Every model will be tested against observations and conventional simulations. The models will be trained on EuroHPC systems and the emerging AI Factories, and will run on a modular platform built on FAIR principles and designed to integrate with DestinE.

Four use cases, each developed with its future users, will test the platform: **Advancing Earth System Science**; **Climate-Resilient Shipping Routes,** on how winds and sea ice could reshape routes and safety at sea; **Energy Infrastructure Planning for Climate Adaptation,** on how heat and drought affect power grids; and **Climate & Health Early-Warning and Resilience**, on infectious disease risk in future climates.

By 2030, CLAIMA aims to take these models to a platform demonstrated at TRL 6, ready for uptake by research institutes and businesses. A launch webinar is planned for early 2027.

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About CLAIMA

CLAIMA (Climate AI Modelling and Analysis) is a Horizon Europe project funded under Grant Agreement No. 101290971. It is building a European Digital Twin Platform for Climate driven by AI, to be demonstrated at TRL 6 by the end of the project. Coordinated by the Alfred Wegener Institute, Helmholtz Centre for Polar and Marine Research, the project runs from September 2026 to August 2030. Its consortium includes 11 partners from six countries, and the EU contribution amounts to almost €10 million.

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