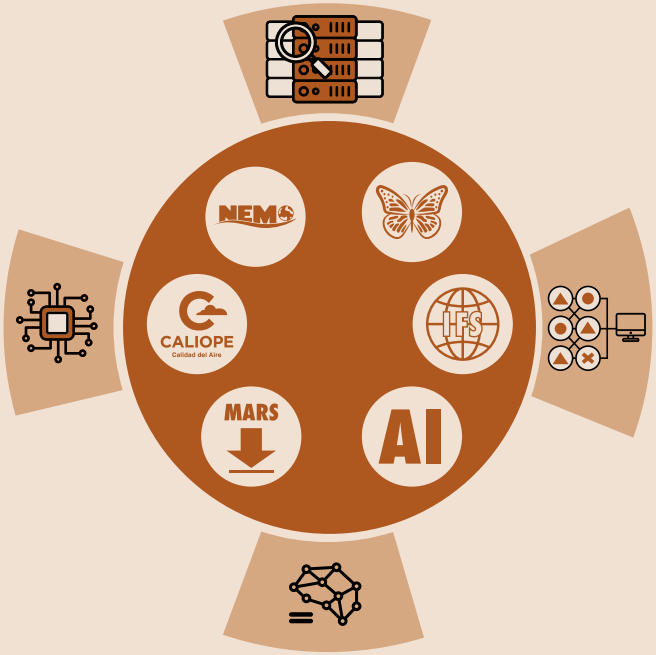
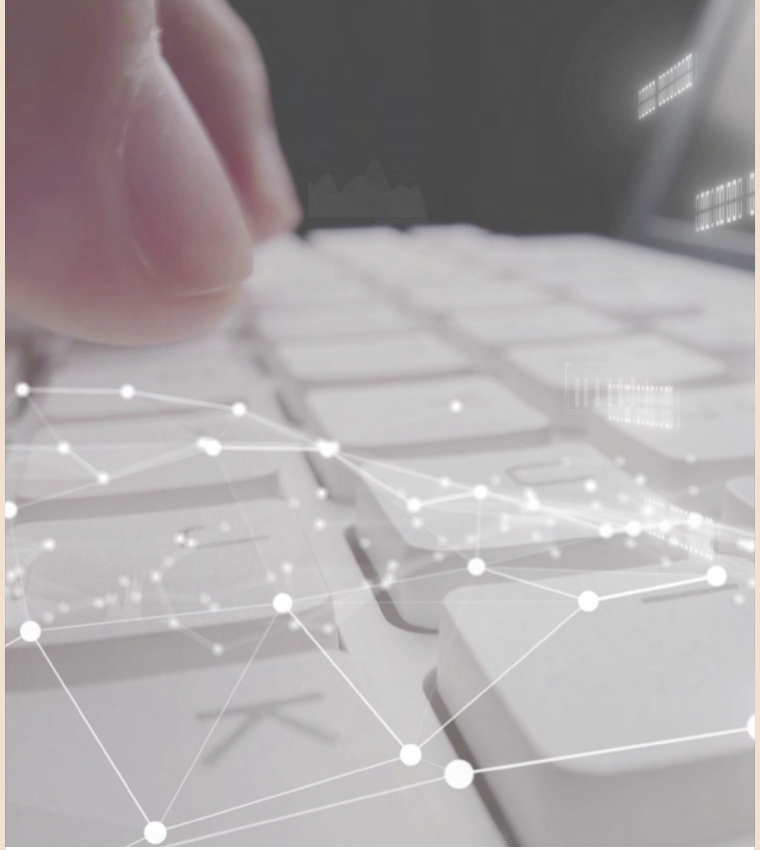
Computational Earth Sciences

In the **Computational Earth Sciences** group of the Earth Sciences Department at the Barcelona Supercomputing Center-Centro Nacional de Supercomputación (BSC-CNS), we develop, manage, and maintain the required tools and data service framework to collect, standardise, and distribute climate and atmospheric data while ensuring that climate models use HPC resources and tools in the most friendly and efficient way.





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COMPUTATIONAL EARTH SCIENCES

Empowering Earth system models by driving frontier computational research and developing HPC services

Barcelona Supercomputing Center
Centro Nacional de Supercomputación

Context

Climate and atmospheric models are becoming increasingly complex and data-intensive, requiring the use of high-performance computing (HPC) resources. Efficient software tools and infrastructure are essential for running these models, extracting insights, and advancing climate and air quality research.

Who we are

We are a multidisciplinary team of researchers, engineers, and computer scientists committed to advancing and optimising the use of cutting-edge technologies to improve Earth system modelling and support scientific progress in climate and environmental research.

What we do

We apply state-of-the-art computational knowledge in the field of Earth sciences, leveraging the convergence of HPC and AI. Our work includes the development and optimisation of scientific software, the design of efficient workflows, and the creation of robust data management frameworks to support climate and atmospheric research.

Why we do it

Earth system models demand massive computing power and generate huge data volumes. Despite this, researchers often face technical barriers in accessing and managing these resources. We aim to remove these barriers by providing efficient, scalable, and user-friendly models and tools that maximise scientific impact.

How we do it

We specialise in the development and optimisation of scientific software, workflows, and data management frameworks, leveraging HPC resources to drive advancements in climate and atmospheric science. We provide cutting-edge computing solutions, technical support and expert guidance to facilitate scientific production in research and operations.