Open Research Demonstrator

NICEST – Climate Community

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Nordic Infrastructure Collaboration on Earth System Tools (NICEST)

What do we have to offer to EOSC-Nordic?

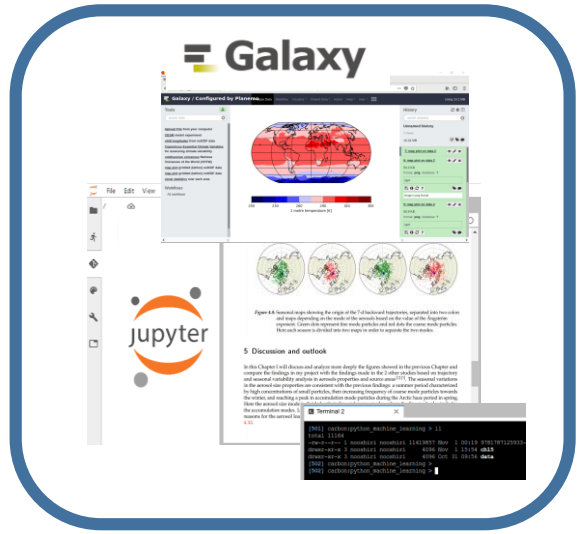
A community focused on understanding, quantifying and reducing uncertainty in projected northern latitude climate change and in particular rapid Artic warming.

- Research objects for Climate Research:
  - Earth System Models
    - Source codes and all the necessary input data, grids, etc.
  - Workflows to run the model in a reproducible way
    - Conda package, docker/singularity containers for running the models
  - Bespoke tools for processing and visualization
    - Interactive plotting, 3D visualization, post-processing utility suites (diagnostics)
  - Well established Nordic collaborations and multi-disciplinary aspects
    - Earth System Grid Federation (ESGF) data node administration & use
    - Parameterization of subgrid processes based on machine learning techniques

Our current approach

Publication

Packages



Tools & Workflows

Data Management

Codes

Training

Containers

[1] *Earth System Documentation (ES-DOC)*

Adopted strategy and technical challenges

- Development of «individual» services rather than coordinated deployment
- «Nomad» computing
  - Difficulty to get the needed «colocated» computing **AND** storage allocations
  - Lot of time wasted moving data (especially when collaborating) or waiting for available compute resources
- Increasing user expectations for tools to visualize complex climate data
- Our community is impatient and it is now becoming critical to capitalize our efforts towards the deployment of effective services

What do we expect from EOSC-Nordic?

- Facilitate the sharing of data and compute across Nordic countries
  - Identify gaps for uptake of FAIR data practices across the climate community in the Nordic countries
  - Get the best all-in-one computer and storage solutions
  - Take over security, authentication and other administrative tasks
- Support the deployment of ESM tools & workflows on EOSC for running ESM models, processing and visualizing model outputs
  - Get feedback on our current approach to adapt our practices
  - Get us out of «nomad» computing so that we can focus on Science