

REQUEST FOR ADDITIONAL RESOURCES IN THE CURRENT YEAR FOR AN EXISTING SPECIAL PROJECT

Please email the completed form to special_projects@ecmwf.int.

MEMBER STATE: IT

Principal Investigator¹: Andrea Storto

Affiliation: CNR ISMAR
.....
.....

Address: Via del Fosso del Cavaliere 100 – 00133 Roma
.....
.....

Other researchers: Giulia Chierici, Davide Cavaliere, Chunxue Yang, Vincenzo de Toma
.....

Project title: Enhancing regional ocean data assimilation in high and mid latitude European seas
.....

Project account: SPITSTOR

Additional computer resources requested for	2023
High Performance Computing Facility (units)	4M SBU
Data storage capacity (total) (Gbytes)	-

Continue overleaf

¹ The Principal Investigator is the contact person for this Special Project

Technical reasons and scientific justifications why additional resources are needed

We quickly run out of HPC resources with respect to the planned resources, mostly because the coupled regional system we developed and tested on the ECMW Atos HPC (for climate applications and coupled data assimilation experiments) resulted more computationally expensive than previously estimated.

The system is described in detail in this paper (provisionally accepted) available at:
<https://gmd.copernicus.org/preprints/gmd-2023-77>

Specifically, we implemented a weakly coupled data assimilation system as a benchmark for future strongly coupled experiments. Such system includes a spectral nudging scheme in the atmospheric component (WRF), which in turns almost double the execution time due to the frequent calls to FFT in WRF for scale decomposition.

In the remaining months of 2023 (Sep-Dec), we are planning additional coupled assimilation experiments, and global NEMO-based experiments to test an improved land-sea coupling scheme relying on gravimetry data.