

REQUEST FOR ADDITIONAL RESOURCES IN THE CURRENT YEAR FOR AN EXISTING EMI R&D PROJECT

Please submit the completed form via <https://www.ecmwf.int/en/support> (choose *Software and Computing*, then *Gain access to computing resources (create ticket)*) or send to special_projects@ecmwf.int

Country/Organisation:Italy.....

Principal Investigator¹:Valerio Lembo (ccvl).....

Affiliation:CNR-ISAC.....

Address:
Via Fosso del Cavaliere 100, 00100, Rome, Italy.....

Project title:
...Exploring the stability of the Atlantic Meridional Overturning Circulation in EC-Earth3-ESM simulations: a contribution to the TIPMIP-OCEAN project (EStabAMOS).....

Project account: **SPITLEM2**

Additional computing resources requested for year		2026
High Performance Computing Facility	[SBU]	10000000
Graphics Processing Unit Cluster - A	[GBU]	
Graphics Processing Unit Cluster - B	[GBU]	
Total DHS Data storage capacity	[GB]	
EWC resources		
Number of vCPUs	[#]	
Total memory	[GB]	
Storage	[GB]	
Number of vGPUs ³	[#]	

¹ The Principal Investigator is the contact person for this EMI R&D Project

Continue overleaf

Technical reasons and scientific justifications why additional resources are needed

The request is made necessary by the fact that we committed to perform the totality of simulations for experimental scenarios A1a/A1b and C(both Tier 1 and 2) in the TIPMIP-OCEAN protocol (Swingedouw et al. 2026, under review: <https://egusphere.copernicus.org/preprints/2026/egusphere-2026-1698/>).

Our initial request was for 40000000 SBU, to be split into 20000000 SBU for 2026 and an equal amount for 2027. Despite only 30000000 SBU were accounted, entirely in 2026, we managed to complete the mentioned simulations, relying upon already existing resources for a minor part of the production. We realised, however, that the final 100 years of the A1a were inconsistent, due to a mistake in the namelist read by the run script, that obliges us to run this final part again.

The reason for the inconsistency is that the model accommodates a polynomial interpolation for the ingestion of negative freshwater hosing in the ramp-down leg of the experiment. While this was correctly accomplished for the ramp-down, the polynomial interpolation was incorrectly commented out for the successive leg, involving the stabilization phase at GWL0 (0 K global warming level, with no freshwater forcing). This prompted an unrealistic negative total freshwater flux (virtual salinity extraction from the ocean) and a slight global warming that has to be corrected.