SPECIAL PROJECT PROGRESS REPORT

All the following mandatory information needs to be provided. The length should *reflect the complexity and duration* of the project.

Reporting year	2022
Project Title:	NEMO4 sensitivity experiments
Computer Project Account:	spitmecc
Principal Investigator(s):	Virna Loana Meccia
Affiliation:	Institute of Atmospheric Sciences and Climate, National Research Council (ISAC-CNR), Italy.
Name of ECMWF scientist(s) collaborating to the project (if applicable)	-
Start date of the project:	01-01-2022
Expected end date:	31-12-2023

Computer resources allocated/used for the current year and the previous one
(if applicable)
Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	-	-	8,600,000	0
Data storage capacity	(Gbytes)	-	-	36,500	0

Summary of project objectives (10 lines max)

We plan to perform sensitivity experiments with NEMO4 to different parameters, focusing on the different vertical mixing parameterizations. This special project (SP) will help design the tuning experiments with EC-Earth4. EC-Earth4 is the new version of the EC-Earth climate model that is currently under development and will participate in the next phase of the Coupled Model Intercomparison Project, CMIP7.

Summary of problems encountered (10 lines max)

We are still designing a protocol for a joint effort with other institutes and colleagues in performing the sensitivity experiments with NEMO4, and we have not started this SP yet.

Summary of plans for the continuation of the project (10 lines max)

We plan to start with the original project in September, running our experiments on Atos.

List of publications/reports from the project with complete references

There are no publications from the project so far.

Summary of results

If submitted **during the first project year**, please summarise the results achieved during the period from the project start to June of the current year. A few paragraphs might be sufficient. If submitted **during the second project year**, this summary should be more detailed and cover the period from the project start. The length, at most 8 pages, should reflect the complexity of the project. Alternatively, it could be replaced by a short summary plus an existing scientific report on the project attached to this document. If submitted **during the third project year**, please summarise the results achieved during the period from July of the previous year to June of the current year. A few paragraphs might be sufficient.

We plan to perform the sensitivity experiments of NEMO4 running the ocean-standalone configuration of EC-Earth4. Besides, we plan to use the computing resources of the current year on Atos. So far, we have installed and compiled the under-development version of EC-Earth, and we are currently performing test runs.