

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

**MEMBER STATE:**           ...Spain.....

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**Other researchers:**     .....

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**Project title:**           ...CMIP6 BSC contribution to HighResMIP (HighResMIP\_BSC)

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**Project account:**       **SPESICCF**

Additional computer resources requested for	2017
High Performance Computing Facility (units)	10.000.000
Data storage capacity (total) (Gbytes)	20.000

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<sup>1</sup> The Principal Investigator is the contact person for this Special Project  
Nov 2015

## **Technical reasons and scientific justifications why additional resources are needed**

Performance tests to estimate the computing resources necessary for the HighResMIP\_BSC project were carried out last year on the previous HPC platform and with previous EC-Earth version. These estimates were therefore approximate and slightly underestimated (336.000 SBU per year of simulation instead of an actual cost of 375.000 SBU). Furthermore, several failures of the model at the early stages of our simulations for technical and scientific reasons made it compulsory to repeat several times the early stages of our spinup. Indeed, our latest set of initial conditions (following the HighResMIP protocol) triggered instability and led us to detect a model bug that we resolved wasting some of our computing resources. After resolving that model bug, the sea ice cover was overestimated and we had to perform model calibration and start the whole spinup simulation over again. As a consequence of this accumulation of issues, we have now consumed most of the hours of the first year of our project and we have only completed the spinup simulation (50 years of simulation), whereas we were expected to carry out an additional 100 years of control simulation this year.

We estimate that with the remaining resources, we can carry out 22 years of the control simulation. We would however need to complete another 28 years of the control simulation for the project to go as planned this year. With an updated computing cost of 375.000 SBU per year of simulation, we would need a total of about 10.000.000 SBU extension to carry out successfully this project.

Finally, in order to be able to share the outputs of our simulations with other partners within the EC-Earth consortium, we would appreciate being able to keep them at ECFS until the end of this year if possible, for which we would need another 20Tb of storage space.