

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

MEMBER STATE: UK

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Project title: Assessing sources of seasonal forecast skill over Europe in summer using relaxation experiments

Project account: **SPGBOREI**

Additional computer resources requested for	20182018
High Performance Computing Facility (units)	5 000 000
Data storage capacity (total) (Gbytes)	3 000

Continue overleaf

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

Technical reasons and scientific justifications why additional resources are needed

Summary

The aim of the special project SPGBOREI has been to investigate summer predictability in relaxation experiments. We have extended these experiments to surrounding seasons to give us a clearer understanding of the relative influences on seasonal predictability throughout the annual cycle. However, we require additional experiments to run further ensemble members and an additional control simulation to produce clean comparison simulations. Unfortunately, this simulation is not currently available for the model version we have performed the relaxation experiments for. Without this additional experiment several of the relaxation experiments we have already performed cannot be analysed much further with a large degree of confidence. Specifically, we require resources for a 25 members control simulation covering a 4 month seasons and 57 years (start dates from 1960-2016). The experiments are run using prescribed SST and sea-ice boundary conditions, consistent with the previous relaxation experiments we have performed.

Technical details

The simulations will be performed with cycle 41r1, as with the previous relaxation experiments we have performed. One month of these simulations has been estimated to be about 700SBU. Running a single member for a four month season across 110 years will therefore cost 148,200 SBU ($650 \times 4 \times 57$). These control experiments require 25 members to confidently establish a baseline for the relaxation experiments (i.e. $25 \times 148200 \sim 3.7\text{m SBU}$).

We therefore request 4m SBU, which would allow us run a 25-member control simulation (costing roughly 3.7m but allowing some leeway for uncertainty in the cost calculation).

These experiments are ready to be submitted immediately.