

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

MEMBER STATE: Italy

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Project title: Development of a perturbation strategy for convection-permitting ensemble forecasting over Italy

Project account: SPITCONV

Additional computer resources requested for	2017
High Performance Computing Facility (units)	2.5 M SBU
Data storage capacity (total) (Gbytes)	200

Continue overleaf

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

Technical reasons and scientific justifications why additional resources are needed

The aim of this project is to develop a complete perturbation strategy for the convection-permitting ensemble over Italy based on the COSMO model (COSMO-IT-EPS).

Presently, the resources of the SP have ended, but we would like to complete the experiments, which deal with running the COSMO-IT-EPS convection-permitting ensemble on severe weather events, with different model perturbations and with (and without) initial conditions from the KENDA data assimilation LETKF-based system.

In particular, we would like to make more runs of the ensemble (and of the related assimilation cycle) on the period summer 2016, where thunderstorms cases have been identified and where experiments on the ensemble development are anyway being carried out in the framework of the SRNWP-EPS II Project (SPITSREP SP). This runs will be a complement of the work done already, where a “control” version of the KENDA implementation has been run in order to provide ICs to the ensemble. Then, the so-produced analyses will be used to provide initial conditions to the COSMO-IT-EPS ensemble, in a few cases.

A single run of the KENDA DA (20 members, 2.2 km, 65 levels, Italian domain, 24 h per day) costs about 115,000 SBU, therefore 15 days of runs cost about 1.7 MSBU. On top, 5 individual ensemble runs will also be performed, to test the new ICs, each of which costs the same amount of SBUs (10 members but 48 h forecast range), bringing the required total to about 2.3 M SBUs. On top, some extra SBU are needed to cover possible implementation problems, particularly because in few runs a different model error representation will be applied, therefore the total request is 2.5 M SBU.