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

MEMBER STATE: Italy

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Project title: Evaluation of coastal climate trends in the Mediterranean area by means of high-resolution and multi-model downscaling of ERA5 reanalysis

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Project account: **SPITBRAN**

| Additional computer resources requested for	2018
High Performance Computing Facility (units)	3 000 000
Data storage capacity (total) (Gbytes)	

Continue overleaf

Technical reasons and scientific justifications
why additional resources are needed

Technical and scientific reasons for additional resources are:

1. we decide to slightly modify the domain of integration of the BOLAM model to be compliant to the MedCORDEX domain (https://www.medcordex.eu/, endorsed by the Med-CLIVAR and Hymnex projects). This will allow, in a second step, the comparison of our results with those produced in the framework of the above mentioned initiative. The extent of the new domain of integration is reported in Figure 1.
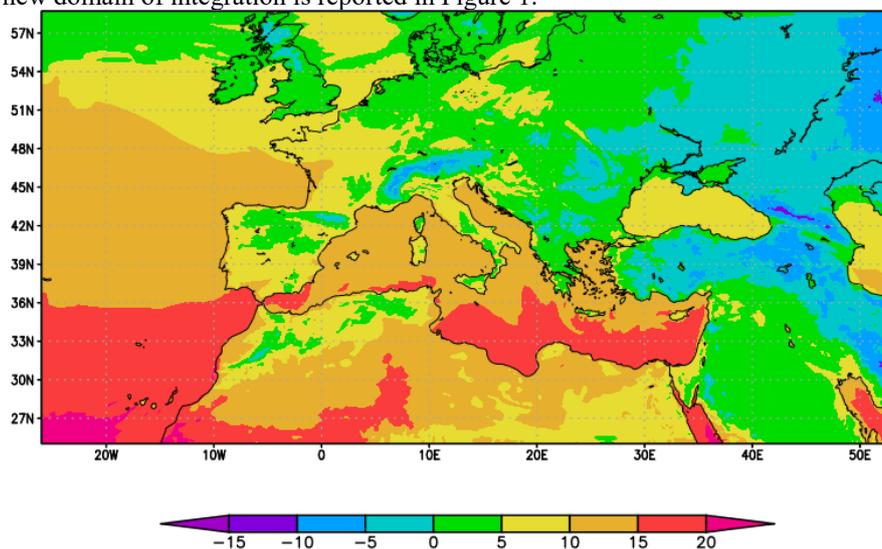
Consequently the domain of the MOLOCH model is slightly bigger than the one presented in the SPITBRAN Request Form; see Figure 2.
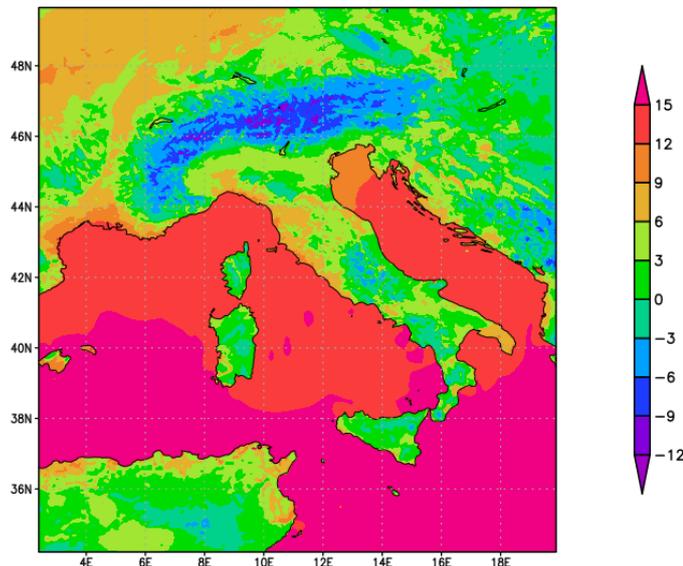
2. To take into account model's spin-up, we decided to start the regional numerical simulations at day – 6 hours as regards the BOLAM model and at day – 3 hours as regards the MOLOCH model. This leads to an increment of the needed SBU of about 12.5% and 20% for the BOLAM and MOLOCH models respectively.
3. Few SBUs were consumed to perform some preliminary integrations with the beta-versions of the BOLAM and MOLOCH models.
4. Some SBU were consumed to test the procedures to run the regional simulations
5. the SBU requested in the SPITBRAN Request Form were under-estimated. This request was based on the experience with the WRF model in the framework of the SPITCAPE project and considering that the BOLAM/MOLOCH numerical chain consumes 1/3 of the SBU needed by the WRF model. On the basis of the numerical simulations carried out so far (July 218), it turned out that this estimate is erroneous and the BOLAM/MOLOCH models consumes about 40% (instead of 33%) of the SBU needed by the WRF model.