

REQUEST FOR A SPECIAL PROJECT 2010–2012

MEMBER STATE: AUSTRIA.....

Principal Investigator¹: Dr. Leopold Haimberger.....

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E-mail: Leopold.haimberger@univie.ac.at

Other researchers:

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Project Title: Bias estimation of historic in situ upper air data

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If this is a continuation of an existing project, please state the computer project account assigned previously.	SP ATLH00	
Starting year: <small>(Each project will have a well defined duration, up to a maximum of 3 years, agreed at the beginning of the project. For projects started before 2009, please state 2009 as the start year.)</small>	2009	
Would you accept support for 1 year only, if necessary?	YES <input type="checkbox"/>	NO <input type="checkbox"/>

Computer resources required for 2010-2012: <small>(The maximum project duration is 3 years, therefore a continuation project cannot request resources for 2012.)</small>	2010	2011	2012
High Performance Computing Facility (units)	5000	10000	
Data storage capacity (total archive volume) (gigabytes)	300	500	

An electronic copy of this form **must be sent** via e-mail to: *special_projects@ecmwf.int*

Electronic copy of the form sent on (please specify date):
...23 April 2009.....

Continue overleaf

¹ The Principal Investigator will act as contact person for this Special Project and, in particular, will be asked to register the project, provide an annual progress report of the project's activities, etc.

Principal Investigator: Dr. Leopold Haimberger

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Extended abstract

In the proposed project, it is planned to pursue homogenization of radiosonde data using conventional homogenization techniques and online bias estimation. While it is hoped that online bias estimation will work also for radiosonde data until the next reanalysis, this cannot be guaranteed and at least needs to be carefully tested. The improved homogenized dataset will provide comprehensive test data about existing shifts in observed radiosonde records.

We intend to use the requested computer time for assimilation experiments with the ERA-Interim data assimilation system. In the assimilation experiments it will be tried to ingest early upper air data from the 1930s onwards. Background departure information from these experiments will help in bias assessment and homogenization of the early data. It will also be tried to develop a statistical model for radiosonde temperature and wind biases, whose parameters can be estimated with the already existing variational bias correction technique.

In the ideal case, the special project will be supported by the Austrian science funds (proposal submitted).