

SPECIAL PROJECT PROGRESS REPORT

Progress Reports should be 2 to 10 pages in length, depending on importance of the project. All the following mandatory information needs to be provided.

Reporting year 2016

Project Title: Small-scale severe weather events: Downscaling using Harmonie

Computer Project Account: spnlster

Principal Investigator(s): Andreas Sterl

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Name of ECMWF scientist(s) collaborating to the project (if applicable) n/a

Start date of the project: 13 April 2016

Expected end date: currently 31 December 2016, but request for extension will be submitted

Computer resources allocated/used for the current year and the previous one (if applicable)

Please answer for all project resources

		Previous year		Current year	
		Allocated	Used	Allocated	Used
High Performance Computing Facility	(units)	25000000.00	2103478.45	25000000	0
Data storage capacity	(Gbytes)	15000	0	15000	0

Summary of project objectives

(10 lines max)

The non-hydrostatic Harmonie model is used to downscale climate model results. It offers the possibility to investigate the effect of climate change on small-scale phenomena like convective rainfall and wind gusts. This is not only relevant from a scientific point of view, but has many applications. For example, wind turbines suffer from night-time low level jets that are not represented well in current climate models, and convective events are only parameterized.

Summary of problems encountered (if any)

(20 lines max)

n/a

Summary of results of the current year (from July of previous year to June of current year)

This section should comprise 1 to 8 pages and can be replaced by a short summary plus an existing scientific report on the project

This program has only been approved on 13 April 2016. Therefore there are no reportable results yet. However, this project is a continuation of a project with the same Computer Project Account (splsster) that ended in 2015, and the continuation of which was rejected in November of 2015. The Final Report of that project is submitted together with the present Progress Report. Please refer to that Final Report for results concerning the project.

List of publications/reports from the project with complete references

n/a

Summary of plans for the continuation of the project

(10 lines max)

We still plan to continue the project and downscale at least 10 years ERA-Interim as a reference, and two times 10 years of EC-Earth, both for present and future climate, to investigate the climate-change signal. Currently we are implementing a new surface scheme (SURFEX) as the runs done so far exhibit an unrealistic annual cycle of soil moisture. An application for the extension of the project has been submitted.