

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 2017

Project Title: Non-linear climate response to volcanic forcing

Computer Project Account: spdkhess

Principal Investigator(s): Jens Hesselbjerg Christensen

Affiliation: University of Copenhagen & Danish Meteorological Institute

Name of ECMWF scientist(s) collaborating to the project (if applicable)
 N/A

Start date of the project: 01.01.2017

Expected end date: 31.12.2018

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)	N/A		2250000	0
Data storage capacity	(Gbytes)	N/A		3000	0

Summary of project objectives

(10 lines max)

We study if/when volcanic eruptions can trigger shifts in the climate system and perform Monte-Carlo simulations with probabilistic determined combinations and strengths of eruptions as deduced from ice core records, for glaciation) and present-day climates (e.g. El Niño cycles). As part of a subsequent analysis, we expect to be able to demonstrate how volcanic forcing impacts temperature patterns, and associated seasonality and snow accumulation on ice sheets, and how this depends on the initial state of the climate system. We have identified a number of possible initial climate states that may or may not respond differently to volcanic forcing. These include but are not limited to, D-O events, ENSO phases, the pacific Decadal Oscillation (PDO), North Atlantic Oscillation (NAO) and states of the Atlantic Multi-decadal Oscillation (AMO).

Summary of problems encountered (if any)

(20 lines max)

The initiation of the project has been hampered by lack of staff, which is due to staff reduction at DMI realized by early 2017- It is expected to be able to pick up this project before the end of 2017

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

See the section above. No progress has been made

List of publications/reports from the project with complete references

See above

Summary of plans for the continuation of the project

(10 lines max)

The project still needs to be initiated.