

## SPECIAL PROJECT FINAL REPORT

All the following mandatory information needs to be provided.

<b>Project Title:</b>	Non-linear climate response to volcanic forcing
<b>Computer Project Account:</b>	spdkhess
<b>Start Year - End Year :</b>	2017 - 2018
<b>Principal Investigator(s)</b>	Jens Hesselbjerg Christensen
<b>Affiliation/Address:</b>	University of Copenhagen & Danish Meteorological Institute
<b>Other Researchers (Name/Affiliation):</b>	

The following should cover the entire project duration.

## **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 you encountered any problems of a more technical nature, please describe them here. )

The initiation of the project was been hampered by lack of staff, which is due to staff reduction at DMI realized by early 2017. A major research grant that was aiming at deciphering the role of volcanism in a wider climate context did not come through – assessed late 2017. If funded, this could have helped on the situation and was the main reason for not terminating this special project in July last year.

## **Experience with the Special Project framework**

(Please let us know about your experience with administrative aspects like the application procedure, progress reporting etc.)

The procedures related to applications as well the current level of needed reporting is adequate. Clearly, reporting results from ongoing activities does not often make a lot of sense. In reality, any statement about findings at such an early phase of a research project will be premature. Only long after a project is finished, it is realized through the peer review process, whether the results match the expectation – unless the project aims at implementing a scheme in a (semi-)operational model.

## **Summary of results**

(This section should comprise up to 10 pages and can be replaced by a short summary plus an existing scientific report on the project.)

Unfortunately various circumstances out my own control prevented the execution of this project

## **List of publications/reports from the project with complete references**

N/A

## **Future plans**

(Please let us know of any imminent plans regarding a continuation of this research activity, in particular if they are linked to another/new Special Project.)

Currently, there are no ideas in my research group to follow up on these ideas.