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 2011

Project Title: The role of clouds in model bias and climate sensitivity

Computer Project Account: spnlccf

Principal Investigator(s): F.M. Selten

Affiliation: KNMI Netherlands

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

Start date of the project: 2011

Expected end date: 2013

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)			300000	8000
Data storage capacity	(Gbytes)			600	-

Summary of project objectives

(10 lines max)

Implementation of satellite simulator software COSP into IFS for Cloudsat radar, Calipso lidar and ISCCP.
AMIP runs with observed SSTs to evaluate the cloud fields of ECEARTH with satellite observations
AMIP runs with perturbed SSTs to evaluate the response of the cloud fields and determine the cloud radiative feedback

Summary of problems encountered (if any)

(20 lines max)

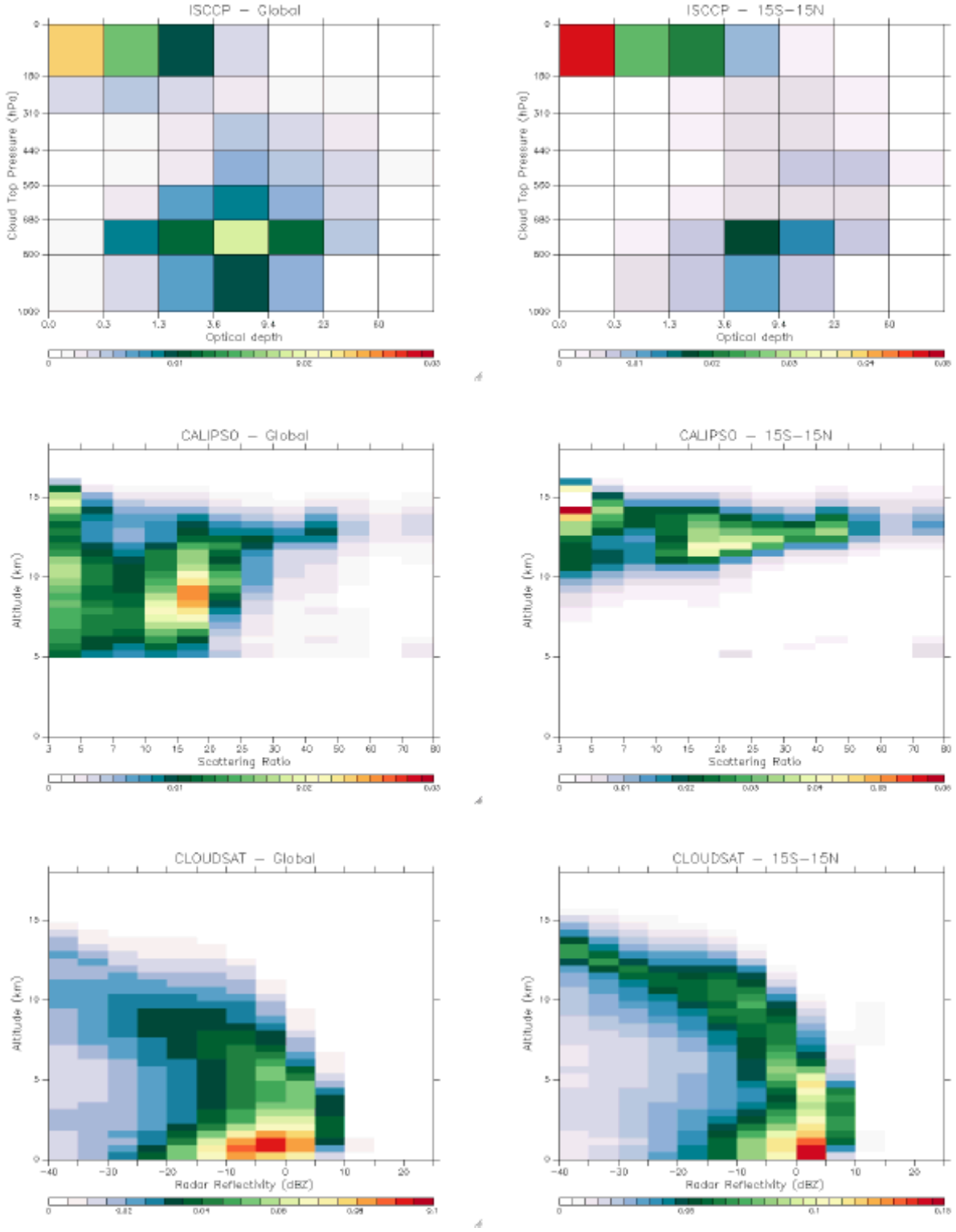
It is not straightforward to add extra diagnostics to be outputted. In the end we made use of the PEXTRA arrays available in CALLPAR.

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

The COSP software v1.3 has been implemented in-line in the EC-Earth source code and is executed at every radiation time-step of 3 hours. As an example, we show COSP output from an AMIP simulation for May 2007 The following options have been chosen within COSP:
_ Number of subcolumns NCOL=20
_ Vertical grid: use vgrid = true and csatgrid=true
_ Input related to ISCCP: isccp topheight = 1, isccp topheight direction = 2
_ Inputs related to lidar: overlap = 3 (max/random) and 8 hydrometeors (no graupel)
_ Inputs related to radar: use_reff = true, use_precipitation_fluxes = true

The left-hand side column shows globally-averaged results, and the right-hand side column shows averages over the tropical belt (15S-15N): (a,b) ISCCP histograms, (c,d) CALIPSO histograms, and (e,f) CloudSat histograms.



List of publications/reports from the project with complete references

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Summary of plans for the continuation of the project

(10 lines max)

Execution of the AMIP runs and evaluation of the cloud fields