

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 year2014.....

Project Title: Effect of heavy rain on the development of tropical cyclones

Computer Project Account:SPITWM.....

Principal Investigator(s):Luciana Bertotti.....
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Affiliation: ISMAR, Venice, Italy.....

Name of ECMWF scientist(s) collaborating to the project
(if applicable) (not officially) Peter Janssen and Jean Bidlot

Start date of the project:2014.....

Expected end date: ...2016.....

Computer resources allocated/used for the current year and the previous one

Please answer for all project resources

| | | Previous year | | Current year | |
|--|----------|---------------|------|--------------|-----------|
| | | Allocated | Used | Allocated | Used |
| High Performance Computing Facility | (units) | | | 400,000 | 356411,18 |
| Data storage capacity | (Gbytes) | | | 200 | |

Summary of project objectives

(10 lines max)

The aim of the present project, as clearly indicated in the title, is to investigate the influence of rain on the process of propagation and attenuation of the swell in tropical zone.

Summary of problems encountered (if any)

(20 lines max)

Technically no particular problem has been encountered. Logistically, because much of the activity devoted to the project is done at ECMWF, there have been some difficulties in adjusting our visit with availability of local space.

Summary of results of the current year (from January to December 2014)

This Special Project has just started. For this reason no basic or important results have been achieved yet. Starting from the knowledge achieved with our previous special project we have retrieve and briefly analyzed the data stored in the ECMWF archive. We have focused our attention to the tropical zone (see figure 1) where the propagation and modification of swell is not influenced by the wind. We started with considering model results after December 2011 when data from the forecast have been saved at a more frequent time step [1hour].

Wind and wave fields from analysis and precipitation data from forecast of the operational run have been retrieved together with available measurements from both buoys and satellite altimeter.

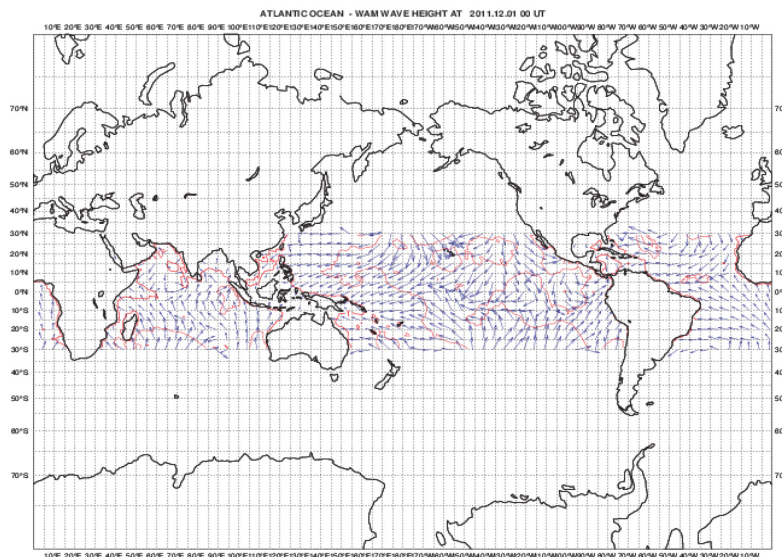


Figure 1 – Tropical area considered for the present analysis. The borders are 30° North and -30° South. Isolines show the significant

t wave height from analysis of the regular runs at 00 UT 01 December 20011. Isolines at 1.0 m interval.

At present the idea is to extract information on the swell directly from the spectra out of the operational and possibly experiment run and then to follow the evolution of such feature while propagating through different meteorological conditions. For this purpose, some experiments have been run to reproduce the meteorological and wave conditions during January-February 2014. This

period has been chosen because of particularly heavy rain falls. The results will be analysed and the wave spectra will be used during the followup of the project.