

# SPECIAL PROJECT PROGRESS REPORT

All the following mandatory information needs to be provided. The length should *reflect the complexity and duration* of the project.

**Reporting year** 2019

**Project Title:** On the 4-D consistency of satellite wind products for regional NWP data assimilation (WIND-4D)

**Computer Project Account:** SPESPORT

**Principal Investigator(s):** Marcos Portabella Arnús

**Affiliation:** Institute of Marine Sciences (ICM-CSIC)

**Name of ECMWF scientist(s) collaborating to the project**  
(if applicable) Isabel Monteiro (IPMA), Javier Calvo (AEMET), Ad Stoffelen (KNMI), Gert-Jan Marseille (KNMI)

**Start date of the project:** January 1<sup>st</sup>, 2019

**Expected end date:** December 31<sup>st</sup>, 2021

## 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
<b>High Performance Computing Facility</b>	(units)	0	0	2500000	0
<b>Data storage capacity</b>	(Gbytes)	0	0	2000	0

**Summary of project objectives** (10 lines max)

An accurate and consistent initialization of the evolution of the 3-dimensional (3-D) wind structure is essential in regional weather analysis. The project focuses on a comprehensive characterization of the spatial scales and measurement errors for the different operational space-borne wind products currently used and/or planned to be used in regional models. In addition, the project will thoroughly investigate and improve the 4-D (including time) consistency between the different horizontal and/or vertical satellite wind products (scatterometer, IASI, AMVs, ADM-Aeolus) under study. Densely sampled aircraft wind profiles (Mode-S) will be used to verify and characterize the satellite products. Data assimilation experiments of the consistent datasets into the Harmonie-AROME regional model will be carried out in two different regions, i.e., the Netherlands and the Iberian Peninsula regional configurations.

**Summary of problems encountered** (10 lines max)

Although the WIND-4D EUMETSAT Research Fellowship project (associated with this Special Project SPESPORT) was granted in June 2018, the start of the project has been delayed due to administrative reasons. First, a specific agreement between the funding institution (EUMETSAT) and my institution (CSIC) had to be prepared and signed, which took about 6 months. Then, the process of issuing the vacancy note and selecting a suitable candidate (for the WIND-4D 3-year fellowship) has taken another 6 months and is expected to conclude in the next couple of weeks. I sincerely apologize for this delay.

**Summary of plans for the continuation of the project** (10 lines max)

In short, a contract for the selected candidate will be prepared by CSIC. The contract will start around September, which leaves little margin for the WIND-4D postdoc to conduct any meaningful experiment at ECMWF IFS in 2019 (note that during the first year of WIND-4D, the focus is on remote sensing rather than on data assimilation, while for the second and third year, the focus is on data assimilation, as specified in the resources request of the SPESPORT proposal). The project would therefore greatly benefit from an extension of the currently granted HPC capabilities through 2022, to guarantee HPC access during the third year of the WIND-4D research fellowship (which will now run until September or October 2022).

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

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**Summary of results**

If submitted **during the first project year**, please summarise the results achieved during the period from the project start to June of the current year. A few paragraphs might be sufficient. If submitted **during the second project year**, this summary should be more detailed and cover the period from the project start. The length, at most 8 pages, should reflect the complexity of the project. Alternatively, it could be replaced by a short summary plus an existing scientific report on the project attached to this document. If submitted **during the third project year**, please summarise the results achieved during the period from July of the previous year to June of the current year. A few paragraphs might be sufficient.

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