

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 2025

Project Title: Irish storms: a storyline approach to future post-tropical cyclones

Computer Project Account: spiekoki

Principal Investigator(s): Tatjana Kokina

Affiliation: Met Éireann

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

Start date of the project: 1st January 2025

Expected end date: 31st December 2025

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)	-	-	30 M	866 K
Data storage capacity	(Gbytes)	-	-	20 TB	0

Summary of project objectives (10 lines max)

The “future weather” framework will be used to investigate the effect of a warming climate on extreme post-tropical storms impacting Ireland.

Summary of problems encountered (10 lines max)

None so far

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

The bulk of the proposed work plan will be carried out in the second half of 2025. This will involve completing the analysis of Storm Ophelia, started earlier in 2024, and then considering other events. An ensemble of scenarios and perturbations will be used.

List of publications/reports from the project with complete references

None

Summary of results

Work in 2025 so far has involved significant technical testing with the boundary interpolation within the HARMONIE-AROME system. This limited-area model typically runs with boundaries from IFS. To obtain a robust simulation of Storm Ophelia, we wish to consider other global models; in particular the GFS from NCEP.

Colleagues at AEMET have adapted the code to run operationally with a wider choice of boundaries and have shared these modifications. However, difficulties remain due to differing grib encodings and parameter definitions between current NCEP files, and those from the time of Ophelia in 2017.