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Making Cyclone Tracking accessible to end users for Climate Research and Applications

Christian Pagé¹, Maarten Plieger², Wim Som de Cerff³, Alessandro Spinuso⁴, Rosa Filgueira⁵, Malcolm Atkinson⁶, Chrysoula Themeli⁷, Iraklis Klampanos⁸, and Vangelis Karkaletsis⁹

¹CECI, Université de Toulouse, CNRS, Cerfacs, Toulouse, France (christian.page@cerfacs.fr)

²KNMI, De Bilt, Netherlands (maarten.plieger@knmi.nl)

³KNMI, De Bilt, Netherlands (Wim.Som.de.Cerff@knmi.nl)

⁴KNMI, De Bilt, Netherlands (alessandro.spinuso@knmi.nl)

⁵University of Edinburgh, EPCC, Scotland, United Kingdom (rosa.filgueira@ed.ac.uk)

⁶University of Edinburgh, Scotland, United Kingdom (Malcolm.Atkinson@ed.ac.uk)

⁷National Centre for Scientific Research "Demokritos", Agia Paraskevi, Greece (sthemeli@iit.demokritos.gr)

⁸National Centre for Scientific Research "Demokritos", Agia Paraskevi, Greece (iaklampanos@iit.demokritos.gr)

⁹National Centre for Scientific Research "Demokritos", Agia Paraskevi, Greece (vangelis@iit.demokritos.gr)

Climate impact and adaptation measures are becoming urgent to be put in place and anticipated. During the past years, climate change effects have been producing adverse conditions in many parts of the world, with significant societal and financial impacts. Advanced analysis tools are needed to process ensembles of simulations of the future climate, in order to generate useful and tailored products for end users.

An example of a complex analysis tool used in climate research and adaptation studies is a tool to follow storm tracks. In the context of climate change, it is important to know how storm tracks will change in the future, in both their frequency and intensity. Storms can cause significant societal impacts, hence it is important to assess future patterns. Having access to this type of complex analysis tool is very useful, and integrating them with front-ends like the IS-ENES climate4impact (C4I) can enable the use of those tools by a larger number of researchers and end users.

Integrating this type of complex tool is not an easy task. It requires significant development effort, especially if one of the objectives is also to adhere to FAIR principles. The DARE Platform enables research developers to faster develop the implementations of scientific workflows more rapidly. This work presents how such a complex analysis tool has been implemented to be easily integrated with the C4I platform. The DARE Platform also provides easy access to e-infrastructure services like EUDAT B2DROP, to store intermediate or final results and powerful provenance-powered tools to help researchers manage their work and data.

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