

# OpenIFS WORKSHOP

**Venue : National French Met. School (Toulouse, France)**

***19<sup>th</sup> - 21<sup>st</sup> June 2018 (15h)***

## Overview

This workshop will introduce participants to the ECMWF OpenIFS forecast model, with presentations and exercises based on a case study of Hurricane “Nadine” during HyMeX\* SOP1 (Special Observation Period nr 1) in autumn 2012

## Location

Room **B132**

## Speakers

G. Carver and G. Szepszo (European Centre for Medium-range Weather Forecast)  
F. Ferry and E. Chabot (Météo-France / French Met. School)

\* HyMeX : Hydrological cycle in Mediterranean experiment ([www.hymex.org](http://www.hymex.org))

*Acknowledgements to V. Ducrocq (CNRM, Toulouse) and F. Pantillon (KIT, Karlsruhe)*

**Tues June 19<sup>th</sup>: Analysis & deterministic forecast at medium range.**

9.30 Workshop overview - *F. Ferry (ENM)*

9.45 Introduction to ensembles, OpenIFS & Metview - *G. Carver & G. Szepszo (ECMWF)*

10.15 Computer setup + presentation of the exercises

*10.45 Break*

11.00 General context (HyMeX) and initial conditions (satellite images) - *E. Chabot (ENM)*

11.15 Practical exercise : Exploring ECMWF analysis on 2012 Sept. 20<sup>th</sup>

*12.15 Lunch*

13.45 Group PHOTO (hall ENM)

14.00 Practical exercise : Exploring ECMWF deterministic HRES forecast at medium range (up to end of Sept. 2012)

*15.45 Break*

16.00 Practical exercise : Vertical cross-sections + tracking and Cyclone Phase Space (CPS) diagrams

17.00 *Finish*

**Wed June 20<sup>th</sup>: Ensemble forecast at medium range and classification methods.**

9.30 – 11.00 Practical exercise : ECMWF ensemble products at medium range (comparison between IFS 2012 vs IFS 2016 reforecast) : spread, spaghetti, member stamps, Cumulative Distribution Function...

*11.00 Break*

11.15 – 12.30 Practical exercise : probabilities and quantiles of QPF (Quantitative Precipitation Forecast)

*Lunch 12.30*

15.00 Practical exercise : Manual clusterings of the ensemble members (IFS 2012 vs IFS 2016 reforecast)

*16.15 Break*

16.30 Practical exercise : EOF analyses and automatic clusterings

17.30 *Finish*

**Thurs June 21<sup>st</sup> : Verification, article reviews and debriefing.**

9.30 A forecaster's experience : official forecasts (before) and a posteriori observations (during) HyMeX IOP6 – *E. Chabot (ENM)*

10.25 *Break*

10.40 Practical exercise : assessment of the forecast error (RMSE plumes, difference maps, ...)

12.15 *Lunch*

13.45 Article reviews and open discussion – *F. Ferry (ENM)*

**Bibliography :**

- Pantillon et al., 2015 : Vortex–vortex interaction between Hurricane Nadine (2012) and an Atlantic cut - off dropping the predictability over the Mediterranean :  
<https://rmets.onlinelibrary.wiley.com/doi/abs/10.1002/qj.2635>

- Evans et al., 2017 : The Extratropical Transition of Tropical Cyclones. Part I: Cyclone Evolution and Direct Impacts :  
<https://journals.ametsoc.org/doi/citedby/10.1175/MWR-D-17-0027.1>

- Bentley et al., 2016 : A Dynamically Based Climatology of Subtropical Cyclones that Undergo Tropical Transition in the North Atlantic Basin :  
<https://journals.ametsoc.org/doi/10.1175/MWR-D-15-0251.1>

- Gerber-Maier et al., 2017 : Birth of the Biscane :  
<https://rmets.onlinelibrary.wiley.com/doi/full/10.1002/wea.2995>

- Picornell et al., 2014 : Detection and thermal description of medicanes from numerical simulation : <https://www.nat-hazards-earth-syst-sci.net/14/1059/2014/nhess-14-1059-2014.pdf>

14.45 Final debriefing (feedback)

15.00 *Finish*