



EUMETNET
EUROPEAN METEOROLOGICAL SERVICES NETWORK



WGCEF meeting in Israel 2018



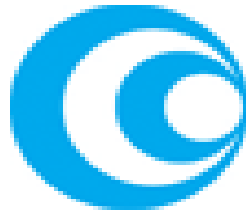
EUMETNET
EUROPEAN METEOROLOGICAL SERVICES NETWORK



*Dr Amit Savir
Head Forecasting IMS*

*Alissa Razy
Chief Forecaster IMS*

WGCEF meeting in Israel 2018



EUMETNET
EUROPEAN METEOROLOGICAL SERVICES NETWORK

The Working Group for Co-operation between European Forecasters is a Working Group of the EUMETNET Science and Technology Advisory Committee (STAC) since 2013.

Goal is to promote an integrated, consistent and collaborative approach to operational forecasting through:

- i. Encouraging and facilitating direct contact among forecasters across Europe particularly in high impact weather situations.
- ii. Promoting the sharing of forecasts and warnings through services such as Meteoalarm.
- iii. Encouraging the development of European forecasting capability through sharing of knowledge, experience, techniques and technology.



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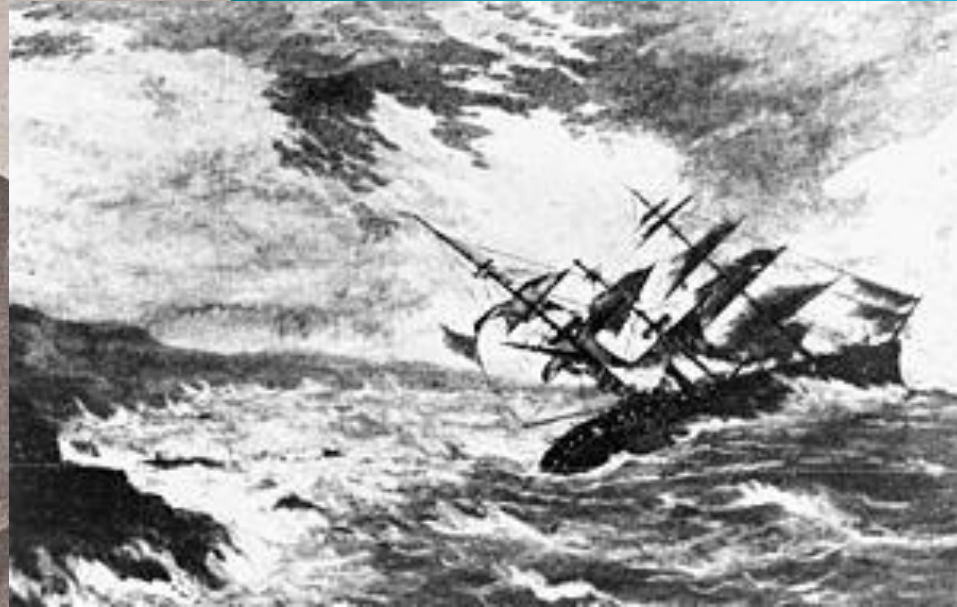
The Working Group for Co-operation between European Forecasters is a Working Group of the EUMETNET Science and Technology Advisory Committee (STAC) since 2013.

The WGCEF Chair may establish subgroups, working in between meetings, to support specific advisory functions, or may canvass opinions via email from WGCEF members.

One example for such a subgroup is the Task Team of Naming Storms in Europe that was set up by WGCEF with strong support by EUMETNET in 2013 due to increased use of storm names by media in cases of severe weather.

This Task Team coordinates the naming of significant storms Europe-wide, thus strengthening the collaboration between NMSs in terms of severe weather warnings, too, following one of the main ideas of Meteoalarm.

The Royal Charter Storm – The Birth of Scientific Weather Forecasting: October 1859



Fitzroy's First weather forecast

1st August, 1861

THE WEATHER.								
METEOROLOGICAL REPORTS.								
Wednesday, July 31, 8 to 9 a.m.	B.	E.	M.	D.	F.	C.	I.	S.
Nairn.. ..	29'54	57	56	W.S.W.	6	9	o.	3
Aberdeen	29'60	59	54	S.S.W.	5	1	b.	3
Leith	29'70	61	55	W.	3	5	c.	2
Berwick	29'69	59	55	W.S.W.	4	4	c.	2
Ardrossan . . .	29'73	57	55	W.	5	4	c.	5
Portrush	29'72	57	54	S.W.	2	2	b.	2
Shields	29'80	59	54	W.S.W.	4	5	o.	3
Galway	29'83	65	62	W.	5	4	c.	4
Scarborough ..	29'86	59	56	W.	3	6	c.	2
Liverpool.. ..	29'91	61	59	S.W.	2	8	c.	2
Valentia	29'87	62	60	S.W.	2	5	o.	3
Queenstown ..	29'88	61	59	W.	3	5	c.	2
Yarmouth.. ..	30'05	61	59	W.	5	2	c.	3
London	30'02	62	56	S.W.	3	2	b.	—
Dover.. ..	30'04	70	64	S.W.	3	7	o.	2
Portsmouth ..	30'01	61	59	W.	3	6	o.	2
Portland	30'03	63	59	S.W.	3	2	c.	3
Plymouth.. ..	30'00	62	59	W.	5	1	b.	4
Penzance	30'04	61	60	S.W.	2	6	c.	3
Copenhagen ..	29'94	64	—	W.S.W.	2	6	c.	3
Helder	29'99	63	—	W.S.W.	6	5	c.	3
Brest	30'09	60	—	S.W.	2	6	c.	5
Bayonne	30'13	68	—	—	—	9	m.	5
Lisbon	30'18	70	—	N.N.W.	4	3	b.	2

General weather probable during next two days in the—
 North—Moderate westerly wind; fine.
 West—Moderate south-westerly; fine.
 South—Fresh westerly; fine.

Explanation.
 B. Barometer, corrected and reduced to 32° at mean sea level; each 10 feet of vertical rise causing about one-hundredth of an inch diminution, and each 10° above 32° causing nearly three-hundredths increase. E. Exposed thermometer in shade. M. Moistened bulb (for evaporation and dew-point). D. Direction of wind (true—two points left of magnetic). F. Force (1 to 12—estimated). C. Cloud (1 to 9). I. Initials:—b, blue sky; c, clouds (detached); f, fog; h, hail; l, lightning; m, misty (hazy); o, overcast (dull); r, rain; s, snow; t, thunder. S. Sea disturbance (1 to 9).

Fitzroy's First weather forecast

1st August, 1861

ECMWF 10-Day forecast

2019

THE WEATHER.

METEOROLOGICAL REPORTS

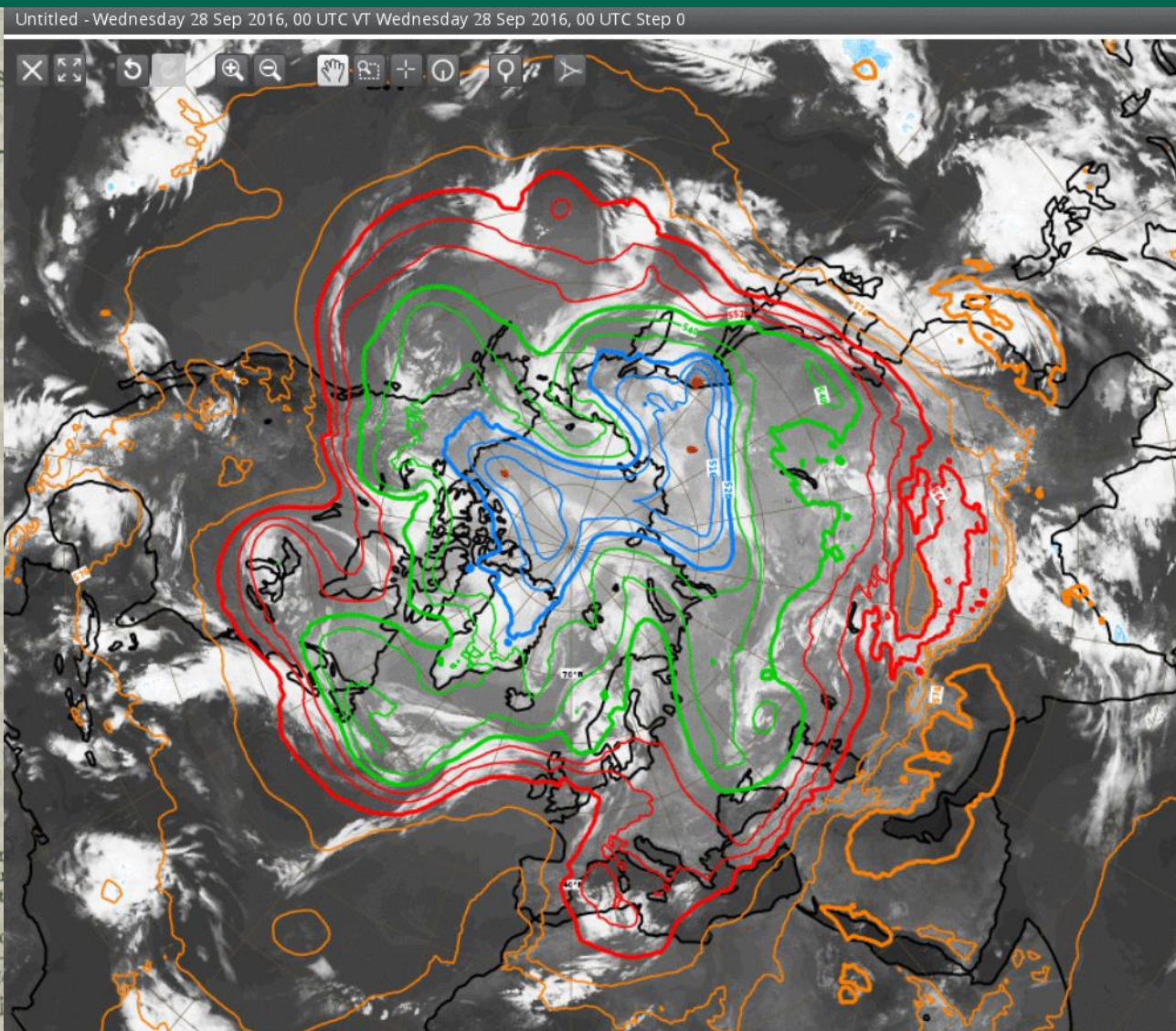
Wednesday, July 31, 8 to 9 a.m.

	B.	E.	M.	D.	F.
Nairn.. ..	29.54	57	56	W.S.W.	6
Aberdeen ..	29.60	59	54	S.S.W.	5
Leith	29.70	61	55	W.	3
Berwick .. .	29.69	59	55	W.S.W.	4
Ardrossan ..	29.73	57	55	W.	5
Portrush .. .	29.72	57	54	S.W.	2
Shields .. .	29.80	59	54	W.S.W.	4
Galway .. .	29.83	65	62	W.	5
Scarborough ..	29.86	59	56	W.	3
Liverpool .. .	29.91	61	56	S.W.	2
Valentia .. .	29.87	62	60	S.W.	2
Queenstown ..	29.88	61	59	W.	3
Yarmouth.. .	30.05	61	59	W.	5
London .. .	30.02	62	56	S.W.	3
Dover.. ..	30.04	70	61	S.W.	3
Portsmouth ..	30.01	61	59	W.	3
Portland .. .	30.03	63	59	S.W.	3
Plymouth.. .	30.00	62	59	W.	5
Penzance .. .	30.04	61	60	S.W.	2
Copenhagen ..	29.94	64	—	W.S.W.	2
Helder .. .	29.99	63	—	W.S.W.	6
Brest .. .	30.09	60	—	S.W.	2
Bayonne .. .	30.13	68	—	—	—
Lisbon .. .	30.18	70	—	N.N.W.	4

General weather probable during next two days in
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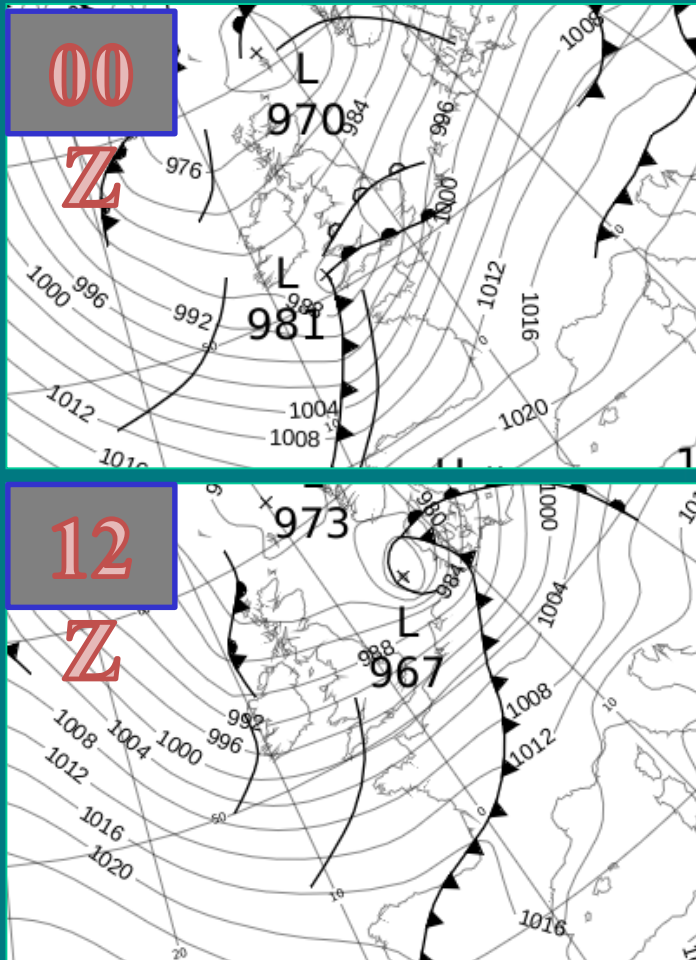
Explanation.

B. Barometer, corrected and reduced to 32° at sea level, each 10 feet of vertical rise causing about one-hundredth of an inch diminution, and each 10° above 32° causing nearly the same increase. E. Exposed thermometer in shade. M. Moisture (for evaporation and dew-point). D. Direction of wind (two points left of magnetic). F. Force (1 to 12—1 being light breeze). I. Initials:—b, blue sky; c, clear; f, fog; h, hail; l, lightning; m, misty (hazy); o, overcast; r, rain; s, snow; t, thunder. S. Sea disturbance (1 to 9).



A Case of Mistaken Identity

28th October 2013



St Jude (Weather Channel)

Christian (FU Berlin)

Allan (DMI)

Simone (SMHI)

Carmen (European Windstorms Centre)



Storm Naming



EUMETNET
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Reach, engagement and influence for warnings

Authoritative Voice

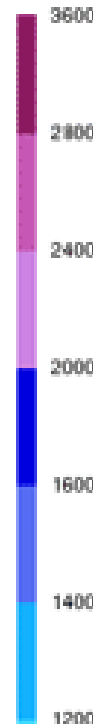
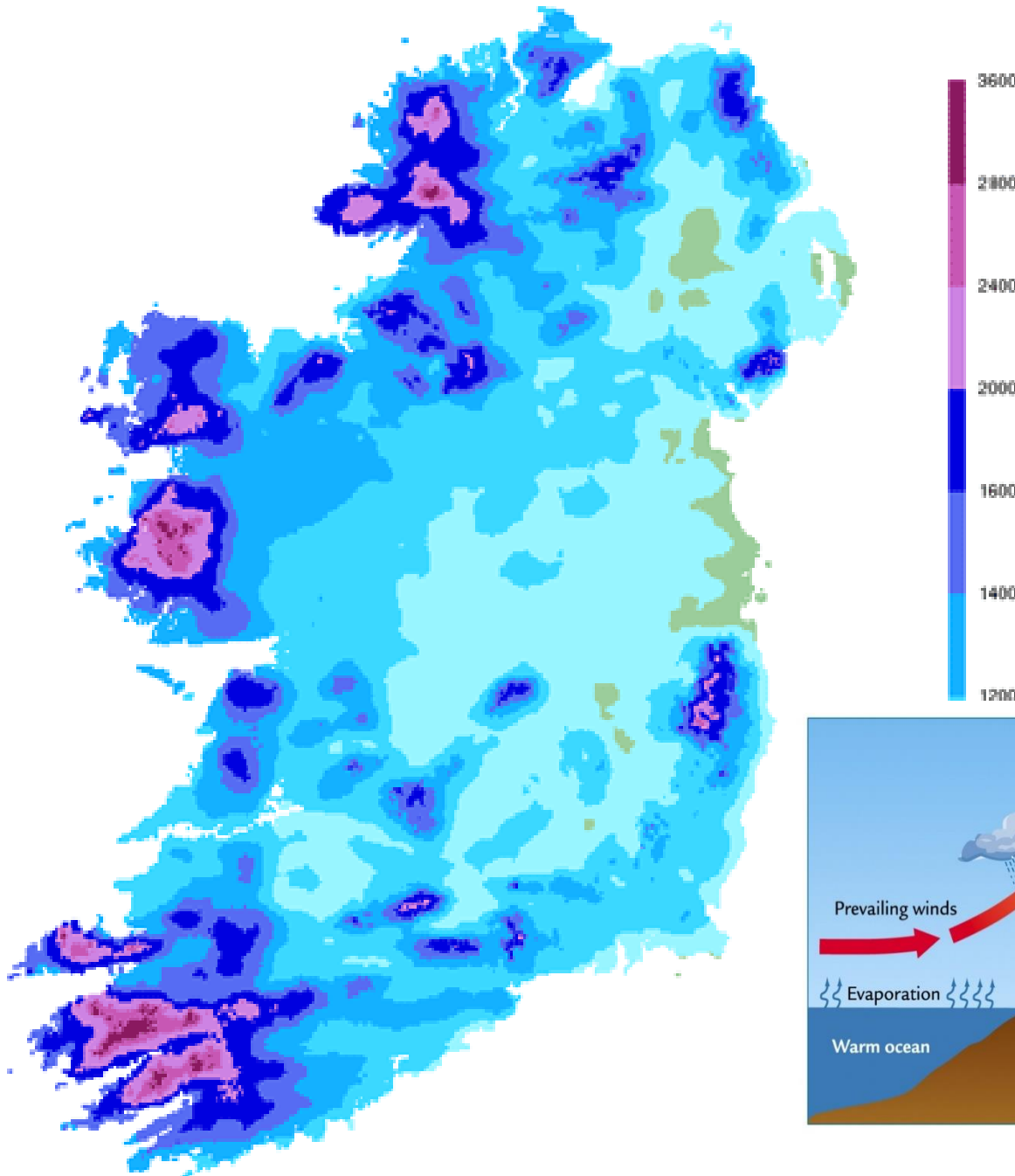
Single name

Communication: 'hashtag culture'

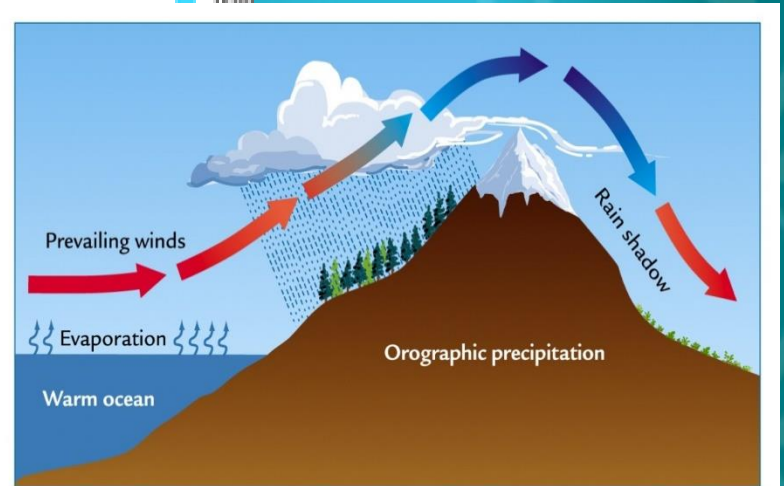
Collaboration with adjoining NMS's

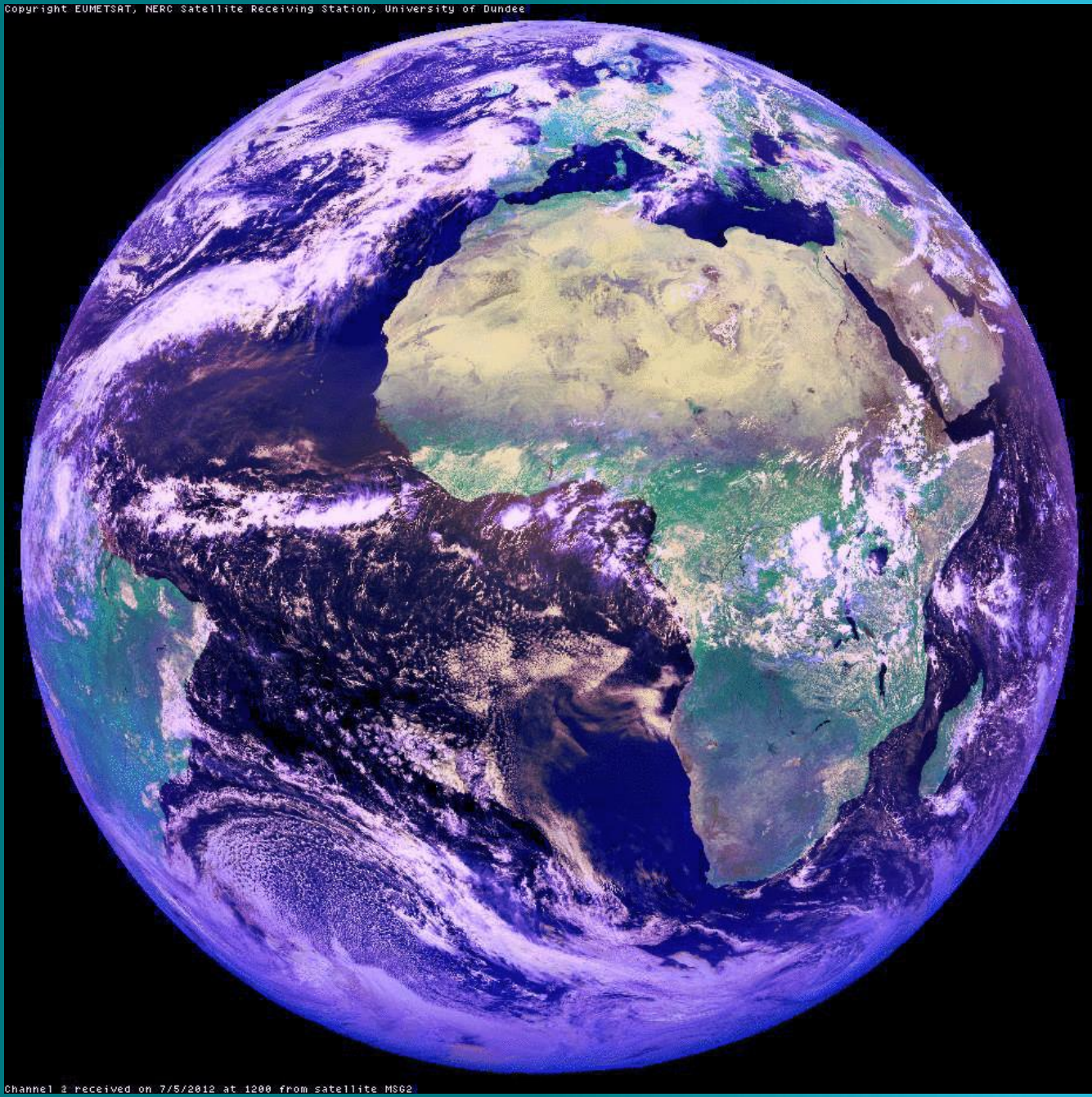
Useful post-event for reference

1981-2010 Mean Annual Rainfall (mm)

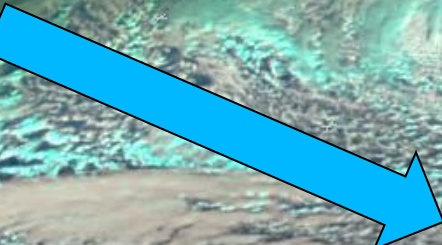


Highest annual rainfall total:
3964.9mm at
Ballaghbeama
Gap, Co Kerry
in 1960.



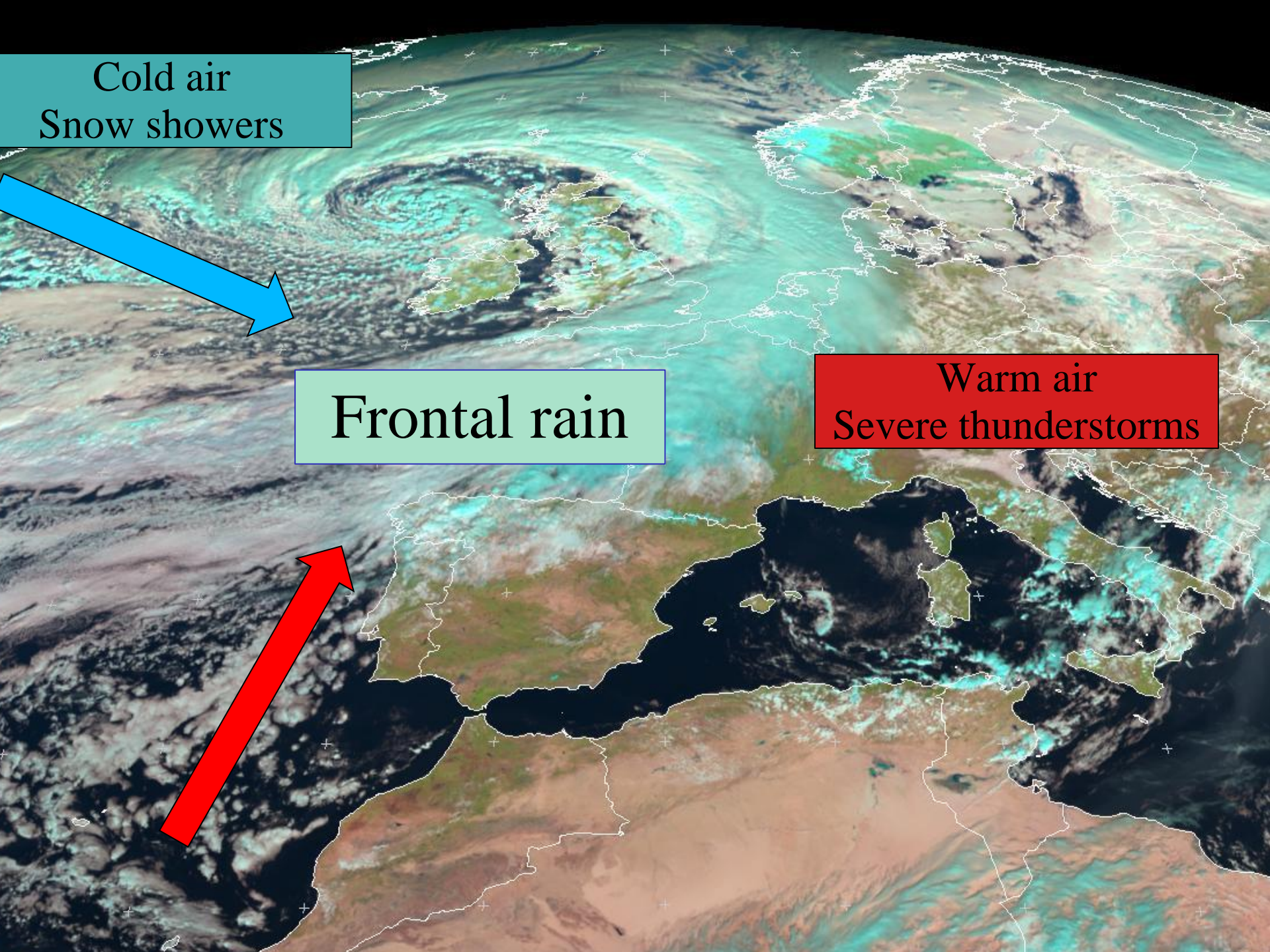
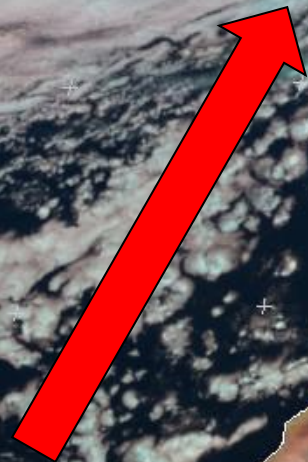


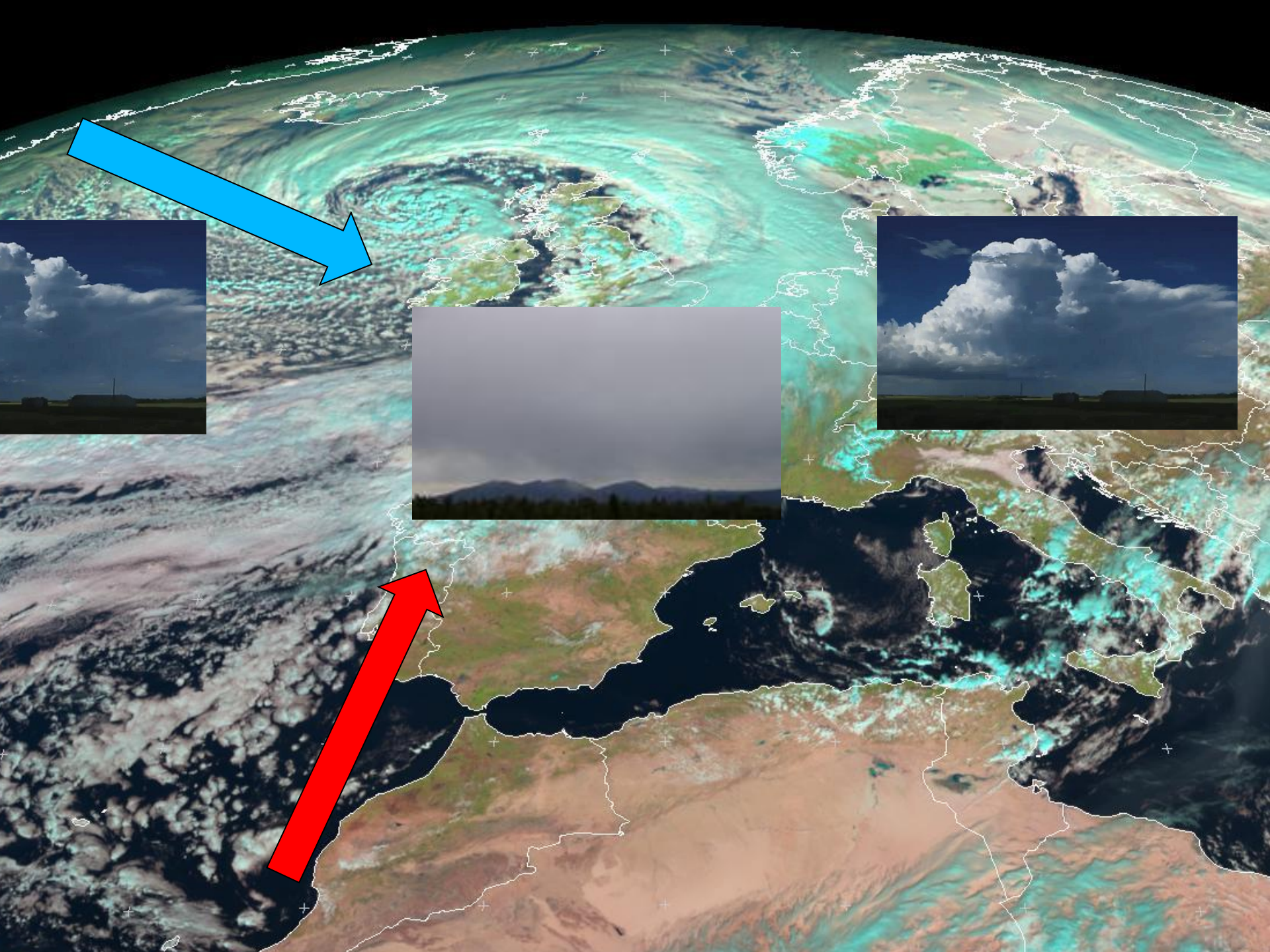
Cold air
Snow showers



Frontal rain

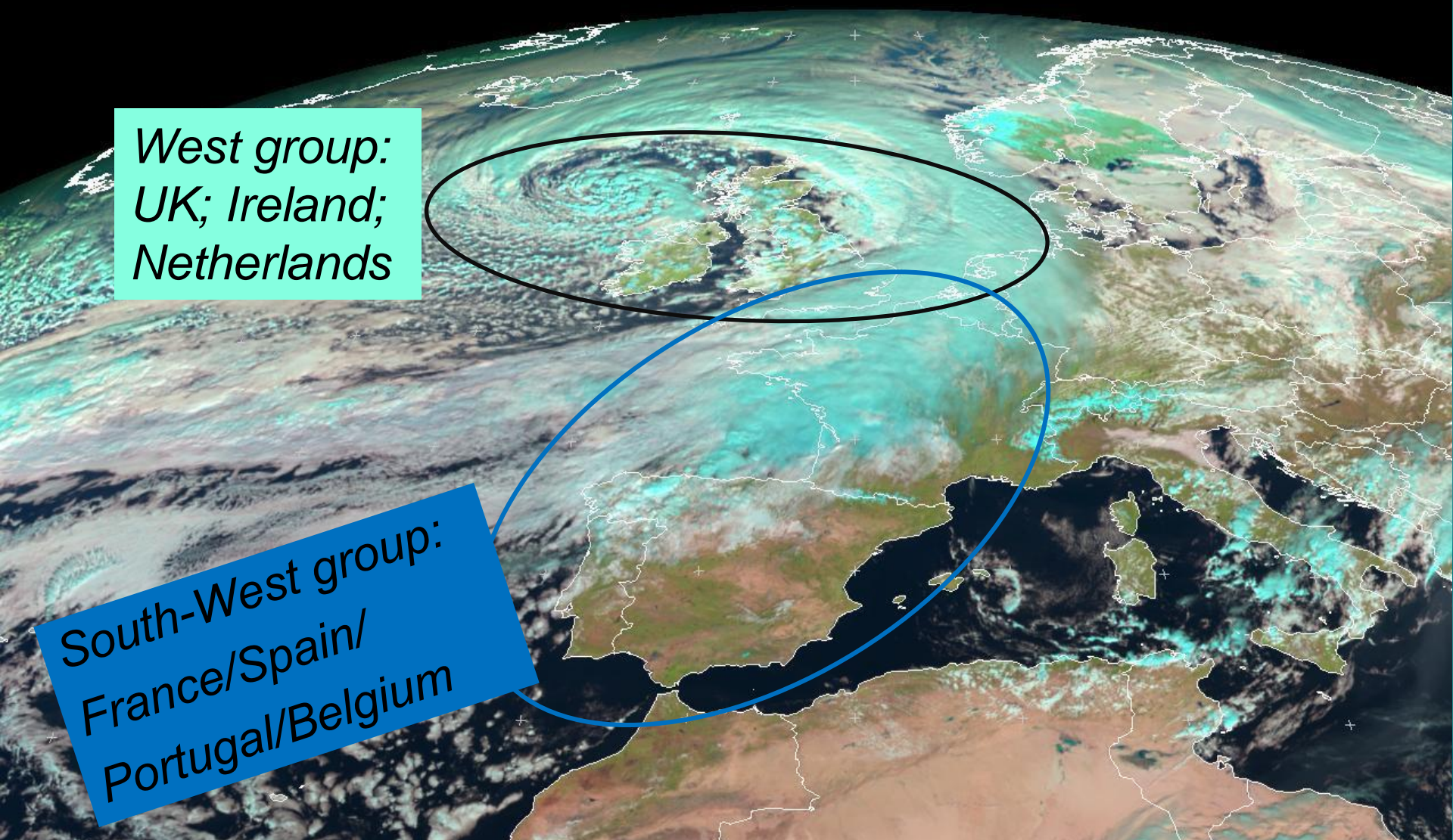
Warm air
Severe thunderstorms







Storm Naming Rules



*West group:
UK; Ireland;
Netherlands*

*South-West group:
France/Spain/
Portugal/Belgium*



Storm Naming Rules

- Mid-latitude Storm depression/Extra-tropical storm/Medicane (not a local wind such as Bora/Foehn)
- Orange/Red wind Warnings in Meteoalarm
but snow/rainfall impacts may exceed wind impacts especially in Mediterranean regions
- NMS which first issues the warning names the Storm in consultation with other partners.
- Names picked by NMS's (public suggestions etc)
- It keeps the name given by another NMS/NHC Maimi



**METEO
FRANCE**



Instituto Nacional de Meteorología e Hidrografía



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Agencia Estatal de Meteorología



GOBIERNO DE ESPAÑA
MINISTERIO DE AGRICULTURA, ALIMENTACIÓN Y MEDIO AMBIENTE



**MET
éireann**

Storm Naming Rules

Ex-hurricane Ophelia (17 October 2017)

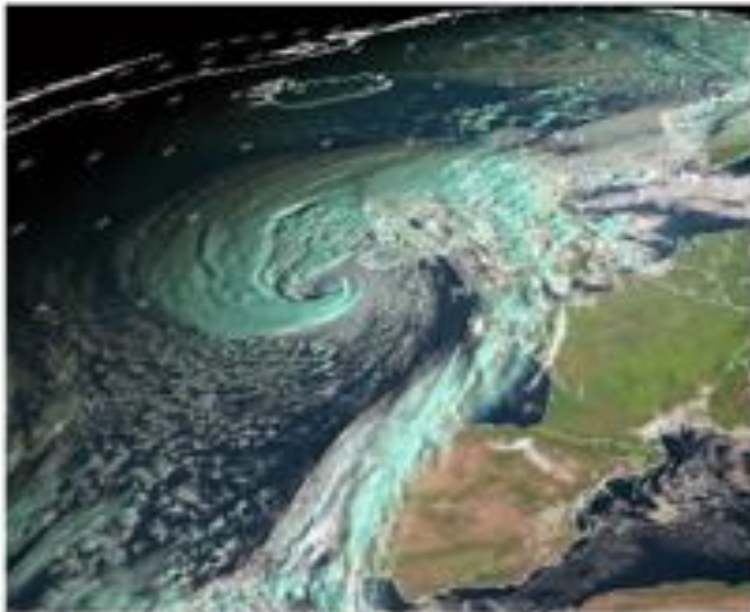


Image from Eumetsat



Storm Ophelia batters the west Cork coast at the Beacon near Baltimore.
Photograph: Youen Jacob/Provision

- It keeps the name given by the NHC Maimi either called 'Ex' or Storm?

Naming storms is a decision made jointly by the Duty Forecasters in both Met Éireann and the Met Office.

The criteria will be:

- A wind storm with potential for significant land-based impact has been forecast.
- A severe wind events giving rise to status Orange or status Red weather warnings
- Consideration will also be given to rain and snow events.

For an explanation of the Met Éireann weather warning criteria, see www.met.ie.



@METeireann
#IrishStorm

In association with the



met.ie
The Irish Meteorological Service Online

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Storm Names 2017/18

Ireland and the
United Kingdom



@METeireann
#IrishStorm



in association
with the



met.ie

The Irish Meteorological Service Online

STORM NAMING COORDINATION FORM

PROPOSED NAME			FORECASTED LOW CENTRE LOCATION (at first orange/red wind warning onset time)	Latitude (in decimals)		
NAMING NMHS / GROUP				Longitude (in decimals)		
FIRST WIND WARNING ISSUING	DATE (YYYYMMDD)		FIRST WIND WARNING ONSET	DATE (YYYYMMDD)		
	TIME (HH:MM UTC)			TIME (HH:MM UTC)		
MAXIMUM WIND WARNING LEVEL	Orange		OTHER ORANGE/RED WARNINGS ISSUED	Rain		Coastal event
	Red			Snow		Others
REMARKS						
WARNINGS WEBSITES	KNMI: https://www.knmi.nl/nederland-nu/weer/waarschuwingen/ Met Éireann: https://www.met.ie/warnings Met Office: https://www.metoffice.gov.uk/public/weather/warnings		Météo-France: http://vigilance.meteofrance.com/ IPMA: https://www.ipma.pt/en/ AEMET: http://www.aemet.es/en/eltiempo/prediccion/avisos			
	Meteoalarm: http://www.meteoalarm.eu/index.php?lang=en UK					

List of names W Group 2019/20: [Atiyah](#), Brendan, Ciara, Dennis, Ellen, Francis, Gerda, Hugh, Iris, Jan, Kitty, Liam, Maura, Noah, Olivia, Piet, [Róisín](#), Samir, Tara, Vince, Willow

List of names SW Group 2019/20: Amelie, Bernardo, Cecilia, Daniel, Elsa, Fabien, Gloria, [Herve](#), Ines, Jorge, [Karine](#), Leon, Myriam, Norberto, Odette, Prosper, Raquel, Simon, Teresa, Valentin, Wanda



*European Cooperation on
Storm Naming*



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W: Ireland/UK/Netherlands

SW: France/Spain/Portugal/Belgium



European Cooperation on Storm Naming

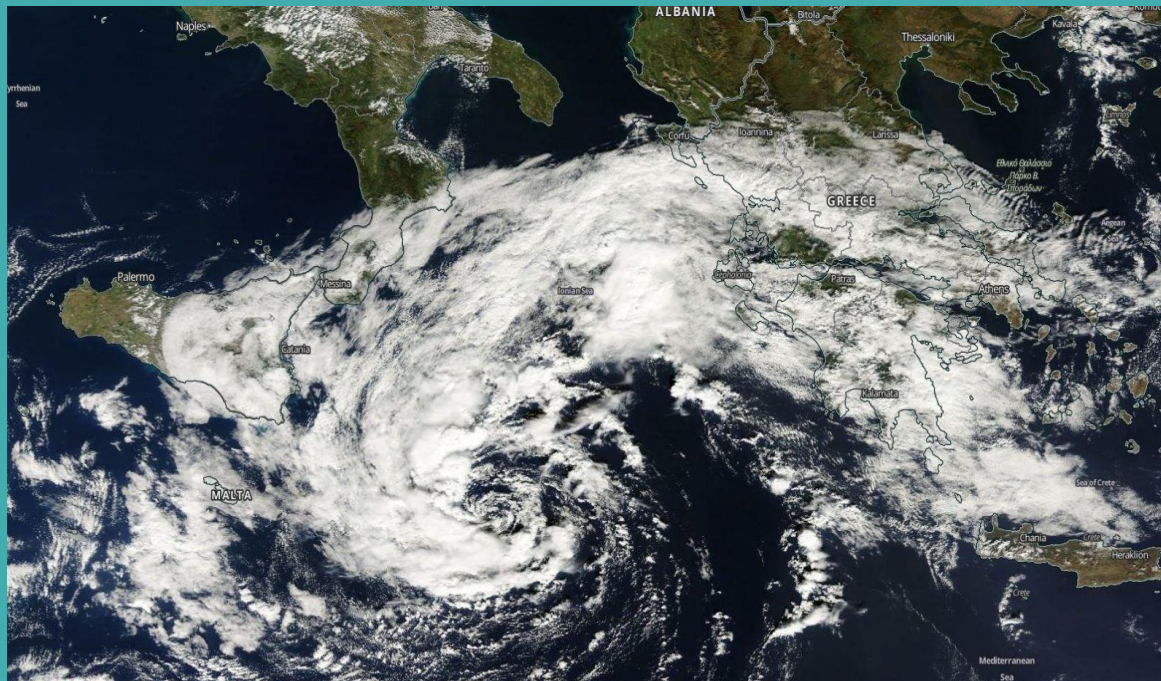


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SE: Italy/Croatia/Slovenia/Montenegro/North Macedonia





ARSO METEO

**STORM NAMING COORDINATION FORM**

PROPOSED NAME			FORECASTED LOW CENTRE LOCATION (at first orange/red wind warning onset time)	Latitude (in decimals)			
NAMING NMHS/GROUP				Longitude (in decimals)			
FIRST WIND WARNING ISSUING	DATE (YYYYMMDD)		FIRST WIND WARNING ONSET	DATE (YYYYMMDD)			
	TIME (HH:MM UTC)			TIME (HH:MM UTC)			
MAXIMUM WIND WARNING LEVEL	Orange		OTHER ORANGE/RED WARNINGS ISSUED	Rain		Coastal event	
	Red			Snow		Others	
REMARKS							
WARNINGS WEBSITES	SMAM: http://www.meteoam.it/consulta_ultimi_messaggi ARSO METEO: http://www.meteo.si/met/si/warning/ DHMZ: https://meteo.hr/naslovnica-upozorenja.php?tab=upozorenja YXMP: https://uhmr.gov.mk/current-warning/?lang=en IHMS: http://www.mete.co.me_or.www.hmz.gov.me			Météo-France: http://vigilance.meteofrance.com/ AEMET: http://www.aemet.es/en/eltiempo/prediccion/avisos IPMA: https://www.ipma.pt/en/			

List of names SE Group 2019/20: Apollo, Bianca, Ciril, Diana, Enea, Fedra, Goran, Hera, Ivan, Lina, Marco, Nada, Ole, Pandora, Remo, Sandra, Teodor, Ursula, Vito, Zora

List of names SW Group 2019/20: Amelie, Bernardo, Cecilia, Daniel, Elsa, Fabien, Gloria, Herve, Ines, Jorge, Karine, Leon, Myriam, Norberto, Odette, Prosper, Raquel, Simon, Teresa, Valentin, Wanda



*European Cooperation on
Storm Naming*



EUMETNET
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W: Ireland/UK/Netherlands

SW: France/Spain/Portugal/Belgium

SE: Italy/Croatia/Slovenia/Montenegro/North Macedonia

Cyprus/Greece/Israel ...Tri-lateral

18th Informal Directors meeting (ICSEED)

4th November 2019 in Israel



*European Cooperation on
Storm Naming*



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Cyprus/Greece/Israel ...Tri-lateral

NE: Finland/Estonia/Latvia/Lithuania

N: Norway/Sweden/Denmark



European Cooperation on Storm Naming



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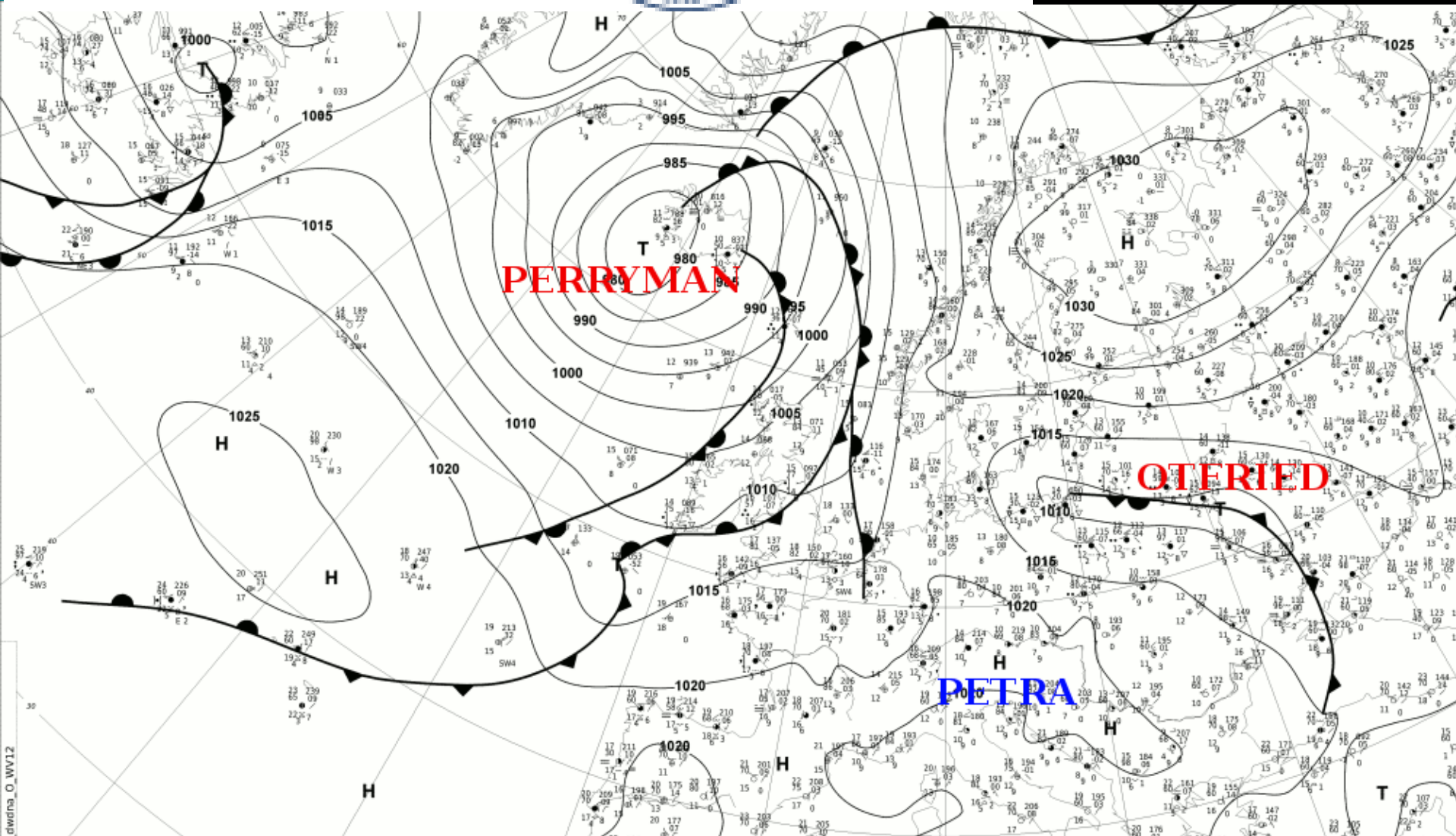
NE: Finland/Estonia/Latvia/Lithuania

N: Norway/Sweden/Denmark

Central: Germany/Austria/Switzerland/Poland/Czech
Republic/Slovakia/Hungary (FU Berlin)



Adopt a Vortex!

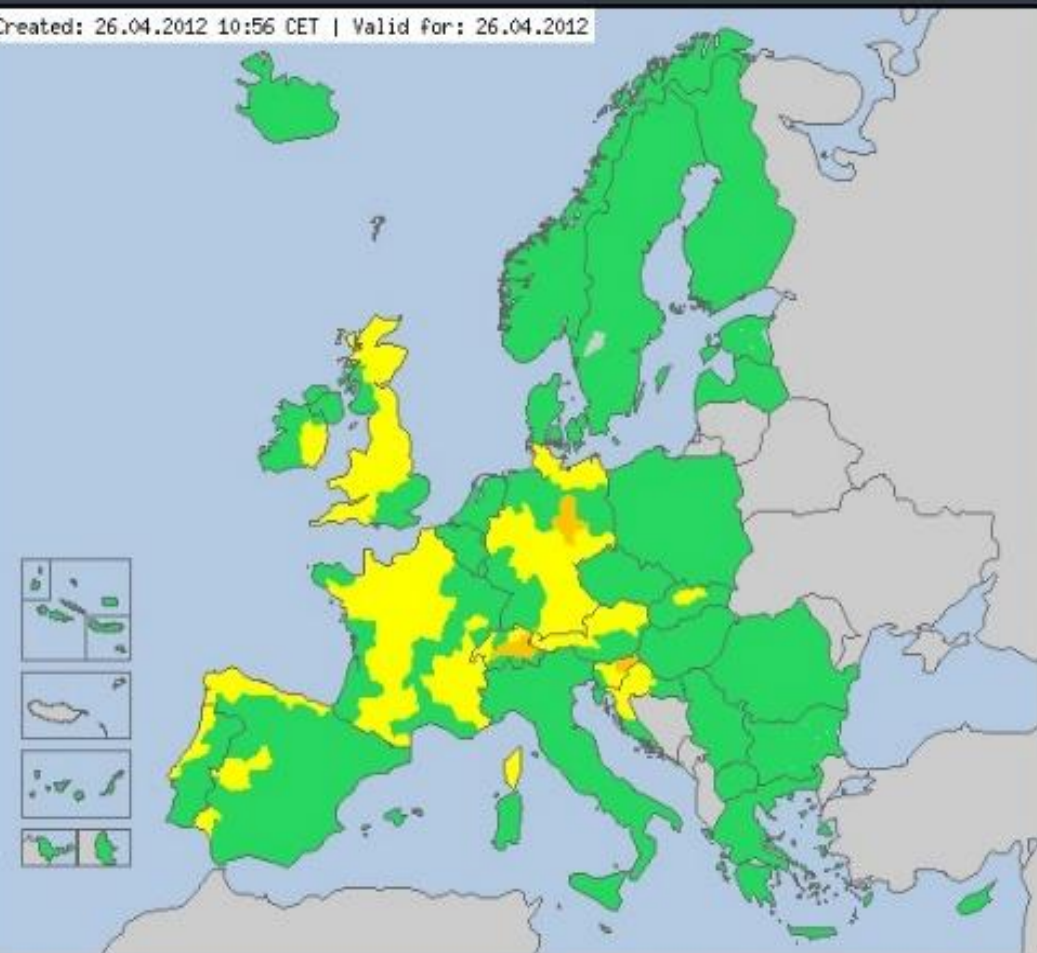




You can adopt a vortex for:
High....299Euro
Low.....199Euro

Rates for Highs and Lows are different because Highs normally last longer than Lows and so they stay on the weather charts longer.
On average FU Berlin expect to name 50 to 60 Highs and about 150 Lows in one year.

Created: 26.04.2012 10:56 CET | Valid for: 26.04.2012



Weather warnings: Europe



Awareness Reports - You can find detailed information about the warnings in the awareness reports issued for each country. Select the relevant country.

AT				IS			
BE				IT			
BG				LU			
CH				LV			
CY				MK			
CZ				MT			
DE				NL			
DK				NO			
EE				PL			
ES				PT			
FI				RO			
FR				RS			
GR				SE			
HR				SI			
HU				SK			
IE				UK			

awareness types:

Display:

Caption:



WARNINGS & ADVISORIES

WEATHER WARNINGS



Status Orange - Orange Wind warning for Cork, Kerry

Orange Wind warning for Cork, Kerry tonight

Valid: Friday 30 August 2019 09:00 to Saturday 31 August 2019 06:00

Issued: Friday 30 August 2019 09:00



Status Yellow - Yellow Wind warning for Cork, Kerry

Yellow Wind warning for Cork, Kerry this evening

Valid: Friday 30 August 2019 09:00 to Saturday 31 August 2019 06:00

Issued: Friday 30 August 2019 09:00



Northern Ireland Warnings

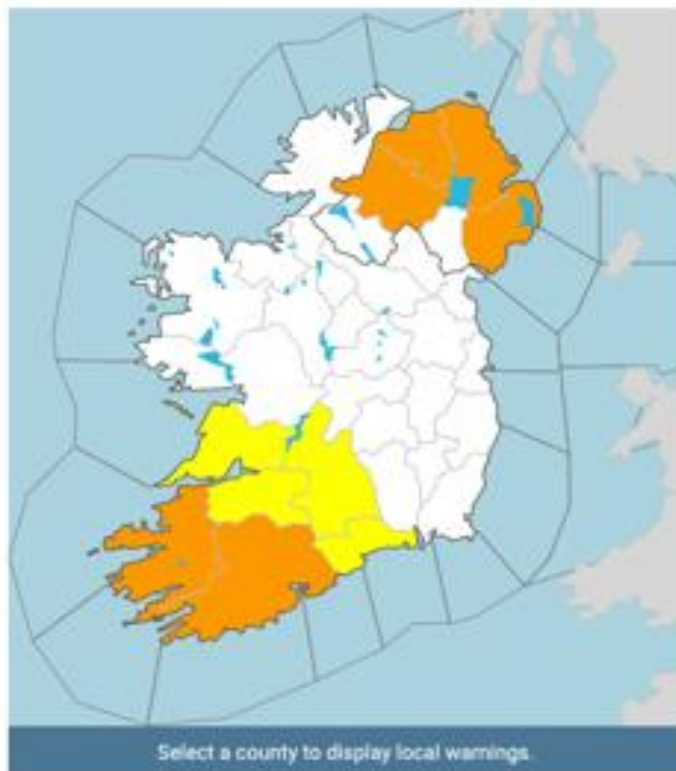
AMBER RAIN and WIND for Antrim, Armagh, Derry, Down

UK Met Office Weather Warnings (www.metoffice.gov.uk)

Widespread rain across eastern regions with a risk of local flooding accompanied by strong winds especially along the coast

Valid: Friday 30 August 2019 09:00 to Saturday 31 August 2019 06:00

Issued: Friday 30 August 2019 09:00

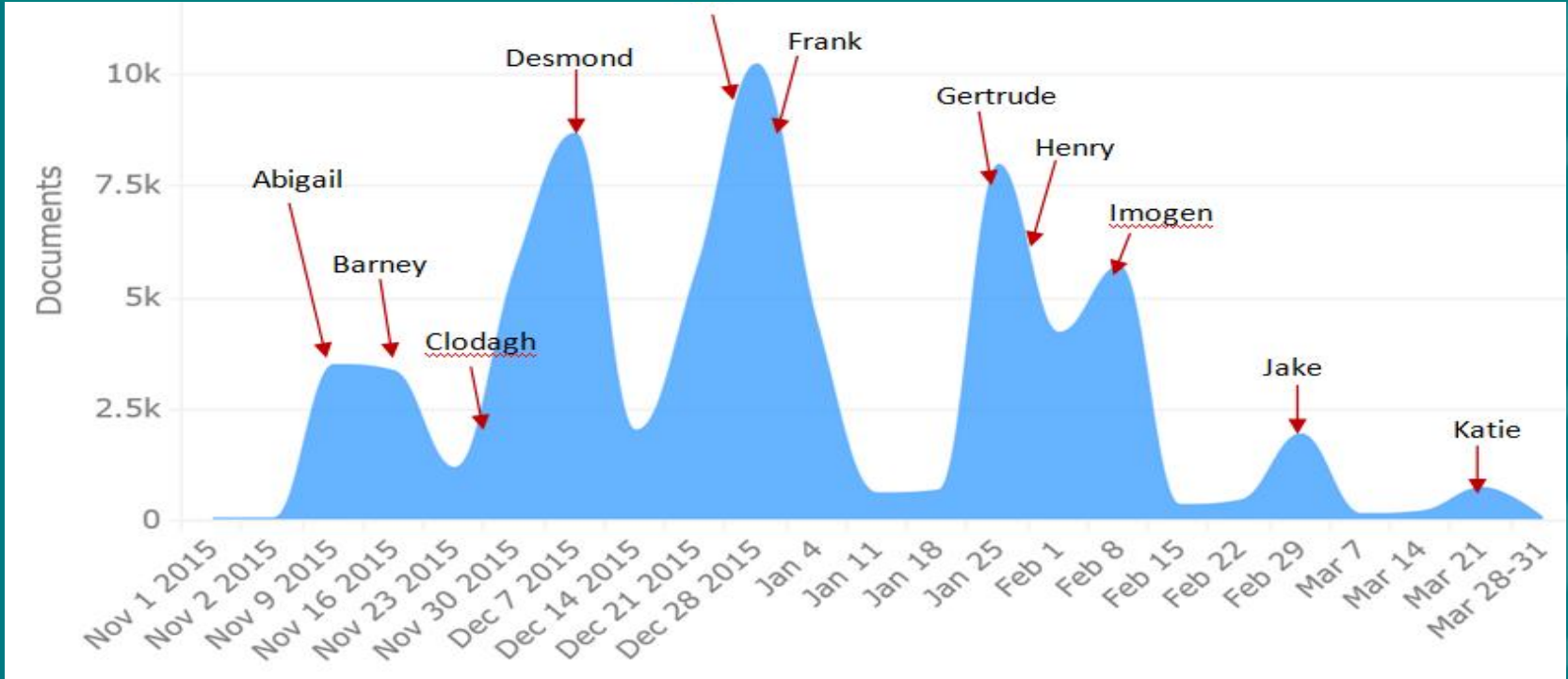

[WARNINGS EXPLAINED](#)
[METEOROLOGIST'S COMMENTARY](#)

MARINE WARNINGS



There are currently no warnings in operation.

Year 1: 2015-16



'All hands on deck' at Met Éireann as forecasters track Hurricane Lorenzo

• Lorenzo

n ex-

updates from

... Hurricane Azores and moving at a slow rate before Wednesday
... cities requesting them to be on standby

Hurricane Lorenzo on track to hit UK with devastating storms

Richard Hartley-Parkinson Wednesday 2 Oct 2019 6:43 am

Storm Lorenzo: Minister warns of 'ferocious' wave surges to coastal areas

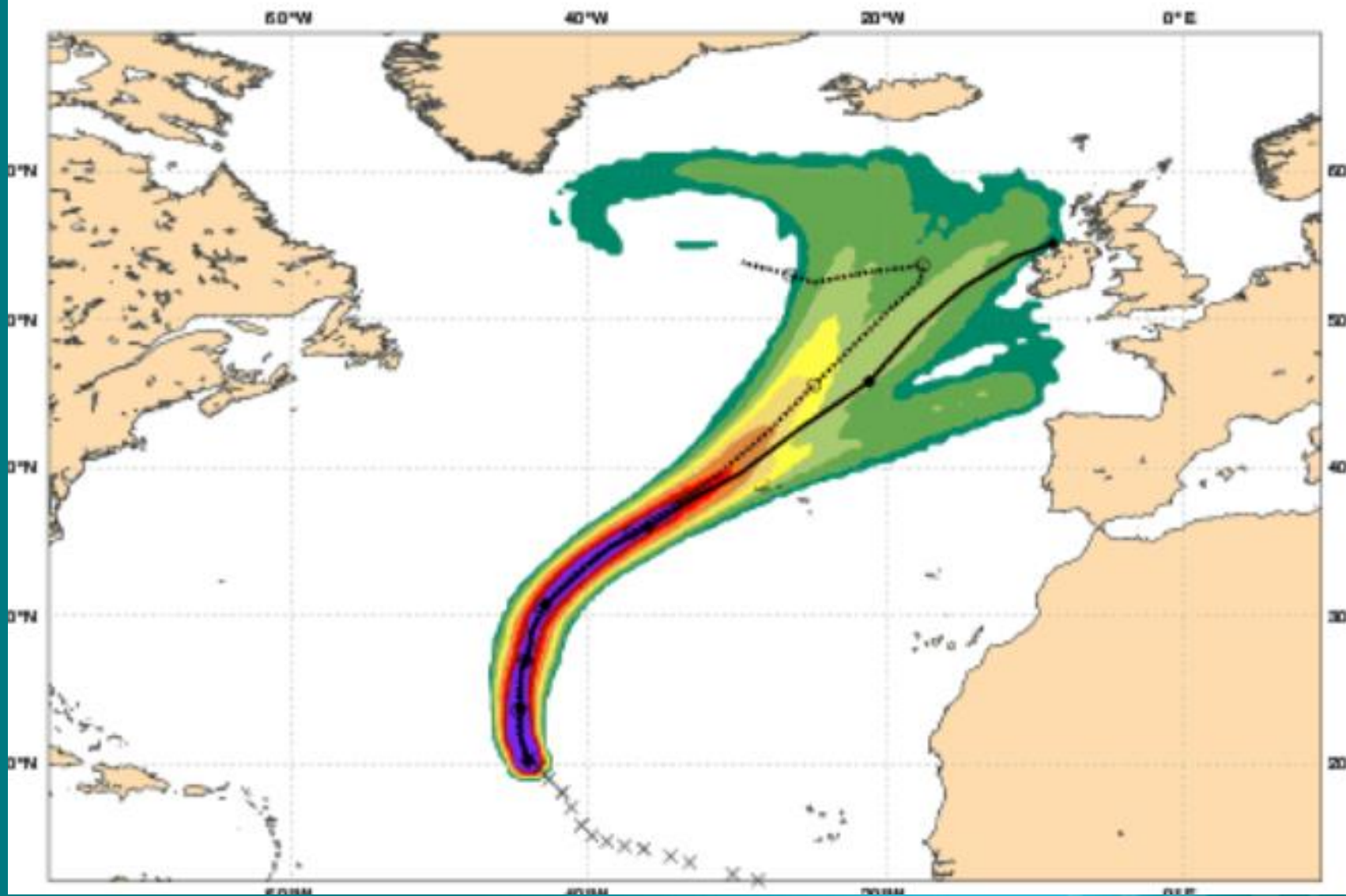


118 4:28 PM - Oct 1, 2019

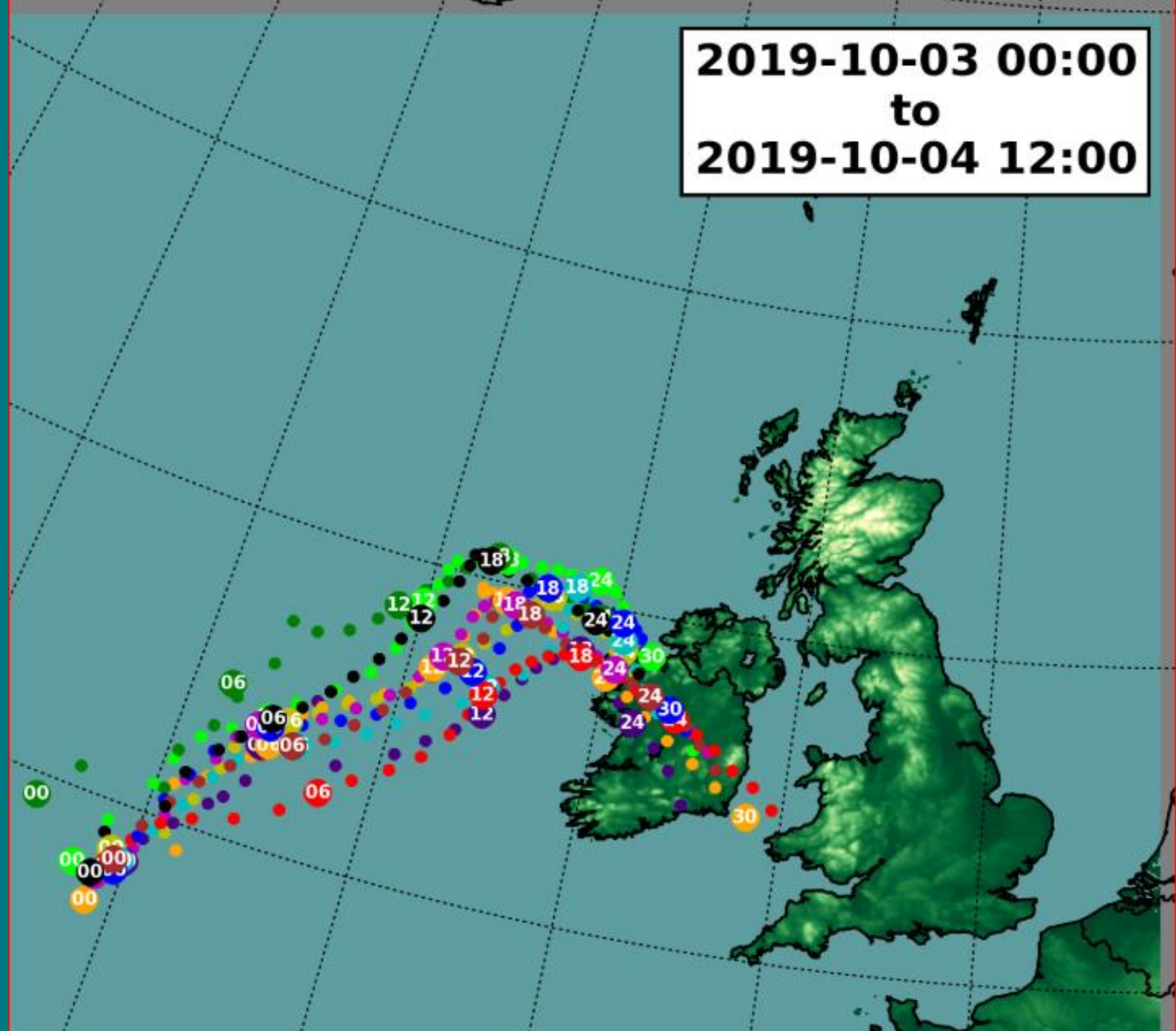


Date 20190928 00 UTC @ECMWF

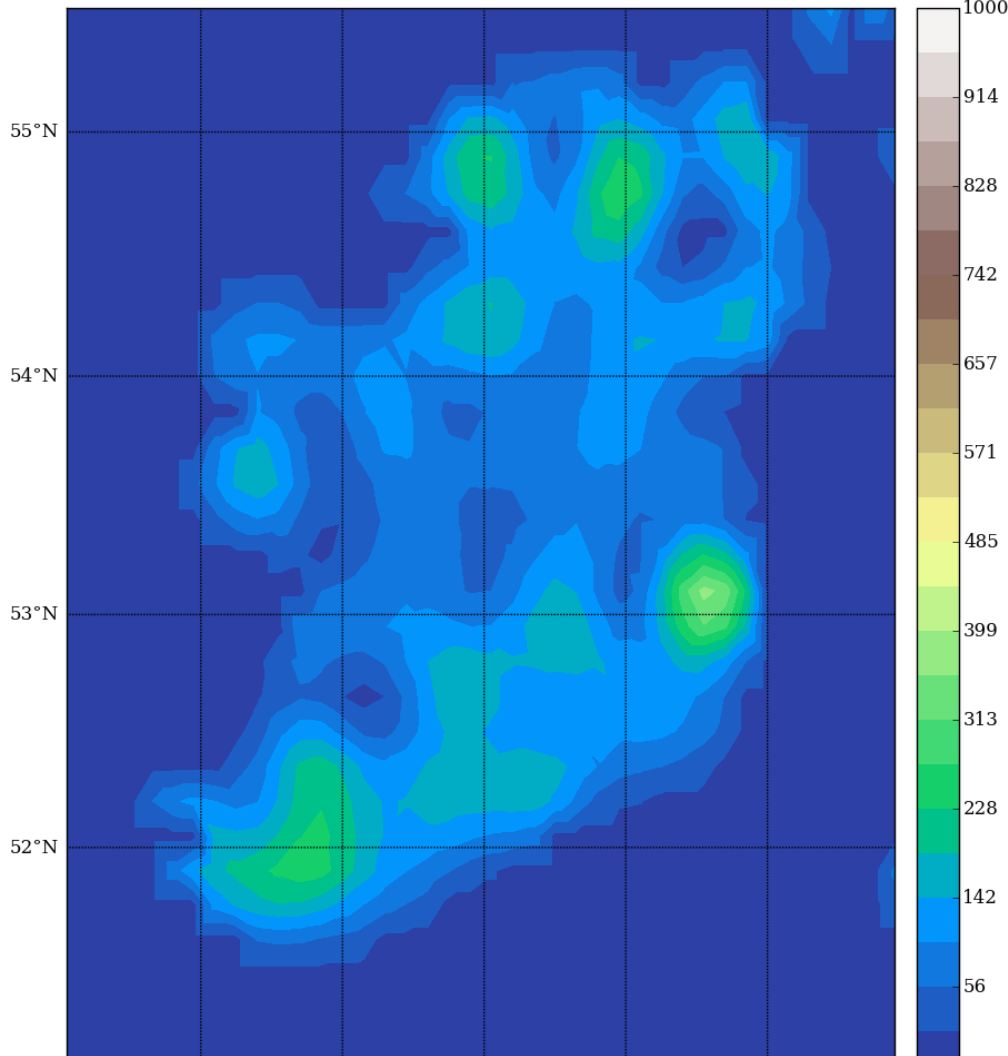
Probability that **LORENZO** will pass within 120 km radius during the next 240 hours
tracks: **solid**=HRES; **dot**=Ens Mean [reported minimum central pressure (hPa) **948**



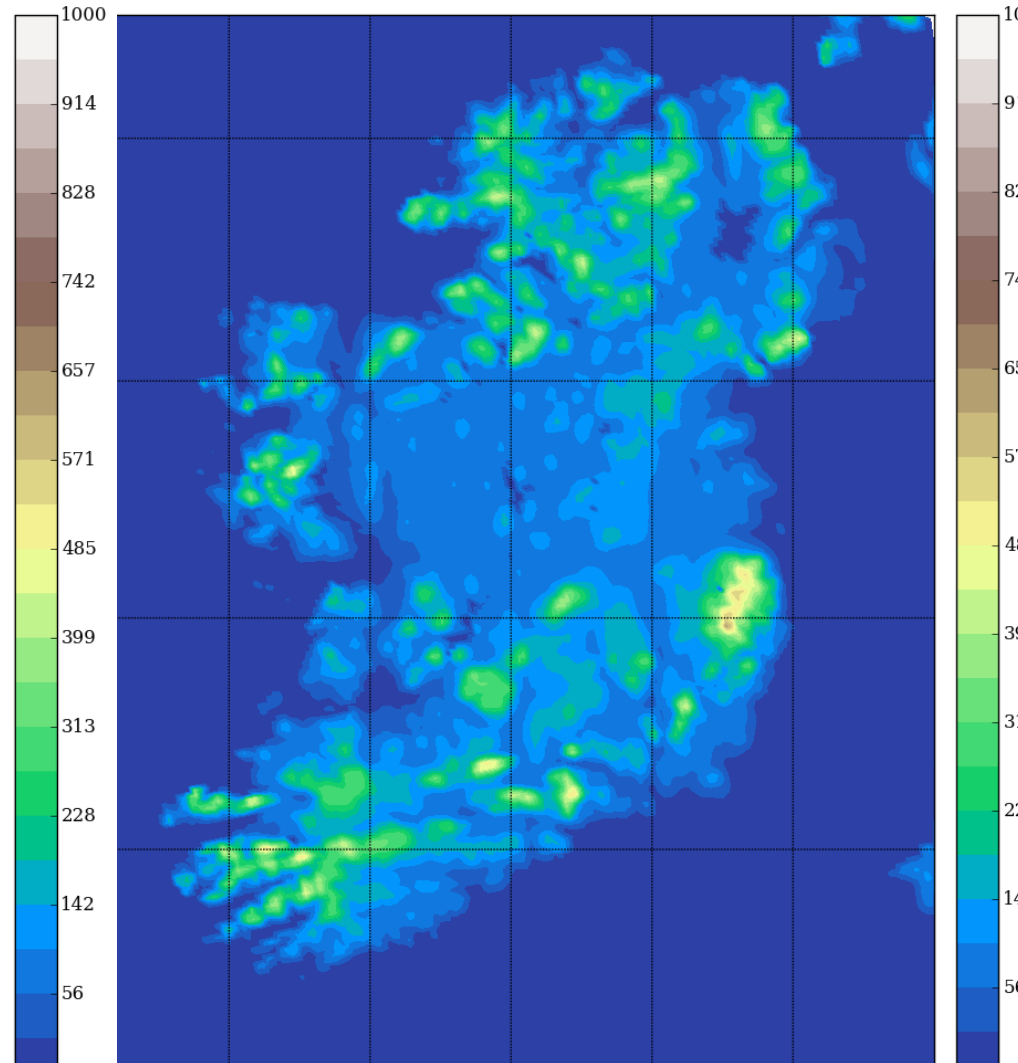
2019-10-03 00:00
to
2019-10-04 12:00



ECMWF Global model
9km resolution



MET Éireann HARMONIE-AROME
model 2.5km resolution



WEATHER WARNINGS

Met Éireann is the National Meteorological Service of Ireland and one of its most important roles is to issue weather forecasts and warnings for Ireland. This Public Weather Service mandate is primarily to protect life and ensure citizen safety. The service also supports the activities of the citizen and other agencies to mitigate damage to property and reduce disturbance to economic activity.

Met Éireann's main suite of warnings are issued between 10am and midday and these are updated as new information becomes available. In general, warnings will not be issued more than 48-hours ahead of the expected adverse weather but advisories on potential hazards can be issued up to a week in advance.

Local authorities are the lead agencies for coordinating the response to severe weather emergencies. Where weather emergencies are judged to impact public safety at national level a National Emergency Coordination Group (NECG) is activated by the Office of Emergency Planning on request from the Department of Housing, Planning and Local Government which is the Lead Government Department for weather emergencies.

Met Éireann provides the weather briefings at the NECG, which brings together all Government Departments and relevant agencies and organisations, to support the locally led response and ensure coordination across the "Whole-of-Government" for the duration of the emergency.

COLOUR CODING EXPLAINED



STATUS YELLOW: Weather that does NOT pose a threat to the general population but is potentially dangerous on a localised scale.

Be aware about meteorological conditions and check if you are exposed to danger by nature of your activity or your specific location. Do not take any avoidable risks.



STATUS ORANGE: Infrequent and dangerous weather conditions which may pose a threat to life and property.

Prepare yourself in an appropriate way depending on location and activity. All people and property in the affected areas can be significantly impacted. **Check** your activity/event and delay or cancel as appropriate.



STATUS RED: Rare and very dangerous weather conditions from intense meteorological phenomena.

Take action to protect yourself and your property. Follow instructions and advice given by the authorities under ALL circumstances and be prepared for exceptional measures.

This colour coding is used throughout Europe via the Meteoalarm system www.meteoalarm.com

STORM NAMING

Naming storms by National Met Services has been shown to raise awareness of severe weather. It provides a clear, authoritative and consistent message to the public and prompts people to take action to prevent harm to themselves or to their property.

Met Éireann, the UK Met Office and KMNI (Netherlands) collaborate in forecasting and naming storms. The names are chosen from public suggestions and are in alphabetical order, alternating between gender.

- A storm is named by a National Met Service when Orange Level wind warnings are forecast to impact over a wide area overland
- Orange or Red level gusts can occur in exposed areas without the event being named

Once a storm is named by a National Met Service the name is retained. For example: Ophelia was named by the National Hurricane Center (USA) and Emma by IPMA (Portugal).

Marine Warnings

Small Craft Warning: Beaufort Force 6 or 7 forecast out to 10 nautical miles offshore around Irish Coasts.

Gale Warning: Gale Force 8 or higher forecast out to 30 nautical miles offshore (Irish Coastal Waters) and the Irish Sea.

- Yellow** Gale Force 8/Strong Gale Force 9
- Orange** Storm Force 10
- Red** Violent Storm Force 11/Hurricane Force 12

USEFUL KNOWLEDGE

- The timing and geographical location of a weather event, as well as recent weather conditions, can impact significantly on the individual and on society
- Heavy rain can turn to snow when temperatures are close to zero
- Winds can exceed general warning thresholds in exposed areas such as coasts and high ground and also in some low lying areas due to funnelling effects
- High waves can occur on lakes as well as along coasts
- Ice is not always visible on roads and surfaces
- Fog/ice can persist all day
- Hail showers can result in potentially lethal road conditions as the hail gets quickly compacted by traffic
- Heavy downpours can lead to flash flooding and poor visibility
- Thunderstorms: Be aware of the dangers of lightning and DO NOT take shelter under an umbrella or a tree. It is dangerous to be out over open water. Be careful of landline phones or any metal that connects with the ground. Lightning can strike the same spot twice

Keep yourself informed about the meteorological conditions from Met Éireann with detailed 7-day forecasts available for over 3,000 locations on www.met.ie and mobile App.

Please subscribe to push notifications of Warnings on the Met Éireann App.

GENTLE REMINDER: CHECK ON YOUR OLDER RELATIVES AND NEIGHBOURS



If it's difficult for you to get around it will be impossible for them.

- Do you have their phone number(s)?
- Phone them or call around
- Make sure they have enough fuel, food supplies and necessary medications
- If in doubt call the Gardaí and ask them to check

You can get more information from:

- www.met.ie (weather)
- www.iws.ie (water safety)
- www.hse.ie (health)
- www.rsa.ie (road safety)
- www.tii.ie (transport systems)
- www.flooding.ie (OPW)
- www.emergencyplanning.ie

BE WINTER-READY



Met Éireann's Weather Warnings



LoCall OEP: 1890 252 736 or 0761 001 608
e-mail: oeop@defence.ie




www.winterready.ie



@emergencyIE

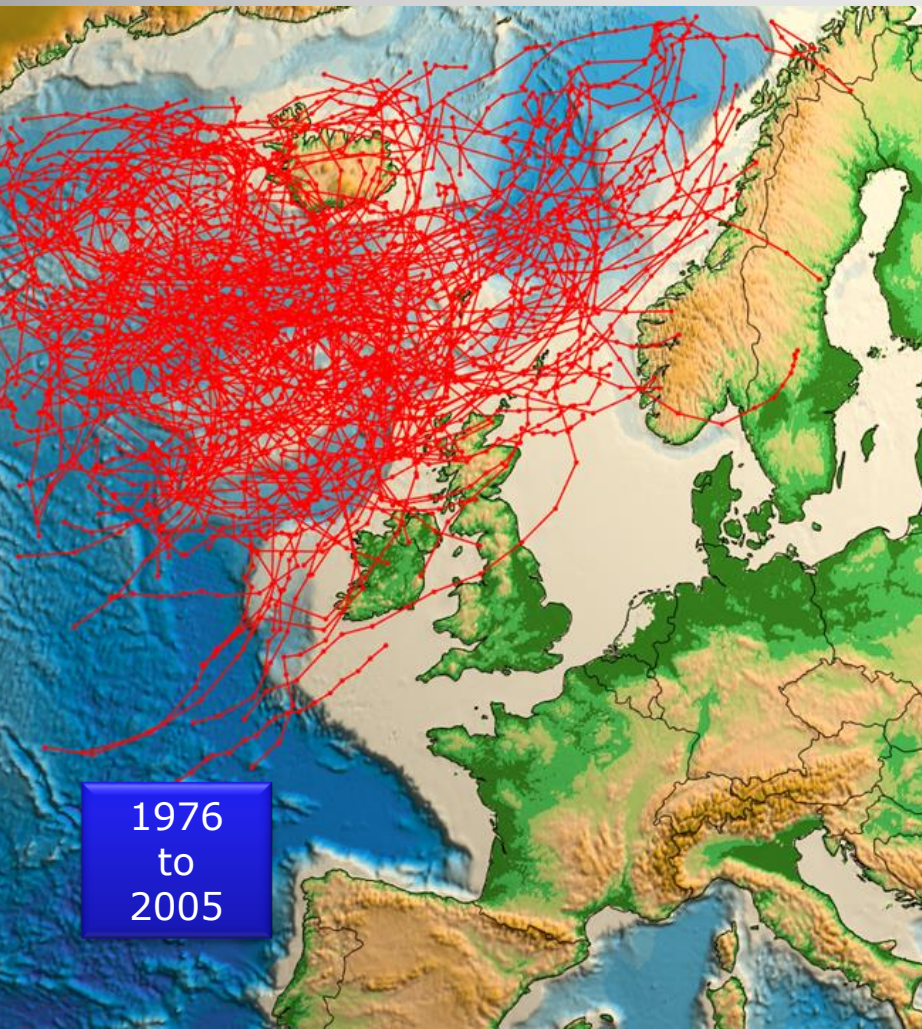


Rialtas na hÉireann
Government of Ireland

 www.met.ie/warnings	STATUS YELLOW <i>Weather that does not pose a threat to the general population but is potentially dangerous on a localised scale.</i>	STATUS ORANGE <i>Infrequent and dangerous weather conditions which may pose a threat to life and property.</i>	STATUS RED <i>Rare and very dangerous weather conditions from intense meteorological phenomena.</i>
Wind <i>Mean wind: 10 minute (higher on coasts/high ground/funnelling effects etc)</i>	Widespread mean speeds between 50 and 65km/h and/or Widespread gusts between 90 and 110km/h	Widespread mean speeds between 65 and 80 km/h and/or Widespread gusts between 110 and 130 km/h	Widespread mean speeds in excess of 80 km/h and/or Widespread gusts in excess of 130 km/h
Coastal Wind Warnings <i>Mean speeds up to 30 nautical miles offshore</i>	Gale force 8 or strong gale force 9.	Storm force 10.	Violent storm force 11/Hurricane Force 12.
Rain <i>Amounts can be up to double on windward upper slopes & impacts vary with soil moisture deficits</i>	20mm – 30mm in 6 hrs or less. 30mm – 40mm in 12 hrs or less. 30mm – 50mm in 24 hrs	30mm – 50mm in 6 hrs or less. 40mm – 60mm in 12 hrs or less. 50mm – 80mm in 24 hrs	Greater than 50mm in 6 hrs or less. Greater than 60mm in 12 hrs or less. Greater than 80mm in 24 hrs or less.
Snow/Ice <i>Heavy rain can turn to snow when temperatures are around zero (up to around +4C)</i>	Guidelines only 3cm or greater in 24hrs.	Guidelines only 3cm or greater in 6 hrs 5cm or greater in 12 hrs 10cm or greater in 24 hrs	Guidelines only 10cm or greater in 6 hrs 15cm or greater in 12 hrs 30cm or greater in 24 hrs
Low temperature/ice <i>Ground temperatures can be as much as 10 degrees lower than air temps</i>	Air minima of minus 3C or minus 4C expected over a wide area (localised lower values will occur). • <i>Dangerous surfaces due to ice and/or lying snow. Situation improving.</i>	Air minima of minus 5C to minus 10C (or lower) expected over a wide area. • <i>Dangerous surfaces due to ice and/or lying snow/freezing rain. Situation stable</i>	Air minima minus 10C (or below) for three consecutive nights or more. Maxima of minus 2C. • <i>Dangerous surfaces due to ice and/or lying snow/freezing rain. Situation likely to worsen</i>
High temperature <i>High minima can be more impactful than high maxima</i>	>27/15/>27 Maxima in excess of 27C expected and minima in excess of 15C over 36 hrs	>30/20/>30/20/>30 Maxima in excess of 30C for three days and minima of 20C for two nights (consecutive)	As orange criterion, but persisting for five or more consecutive nights.
Thunderstorms <i>Possible flash flooding</i>	Localised thunderstorms/lightning activity/heavy rainfall.	Widespread thunderstorms/severe lightning activity/heavy rainfall/large damaging hail	Exceptional.
Fog (or freezing fog)	Dense fog over a wide area or pockets of freezing fog.	Dense fog/freezing fog persisting over a wide area causing a widespread and significant driving hazard on national primary routes.	Exceptional.

- Met Éireann is the National Meteorological Service of Ireland and issues weather forecasts and warnings to ensure the protection and safety of life and property and to enhance support for impact-based decision making for weather events
- Warnings are issued by the duty forecaster up to 48-hours in advance. The main suite of warnings are generally issued between 10am and midday but are updated as necessary. Advisories on potential hazards are issued up to a week in advance
- Impacts from wind/rain/snow etc. vary depending on location, recent weather conditions, state of ground, time of year as well as duration

MID-CENTURY (2041-2060) PROJECTIONS EXTREME STORM TRACK





Dr. Alan Hally, Liz Walsh, Noel Fitzpatrick



Pat Clark, Liz Walsh, Noel Fitzpatrick



Chaos and Computing in Weather Forecasting
Met Éireann Podcast

Episode 1 - Fundamentals of Climate Change and Projections for Ireland

Episode 1 - Podcast Notes

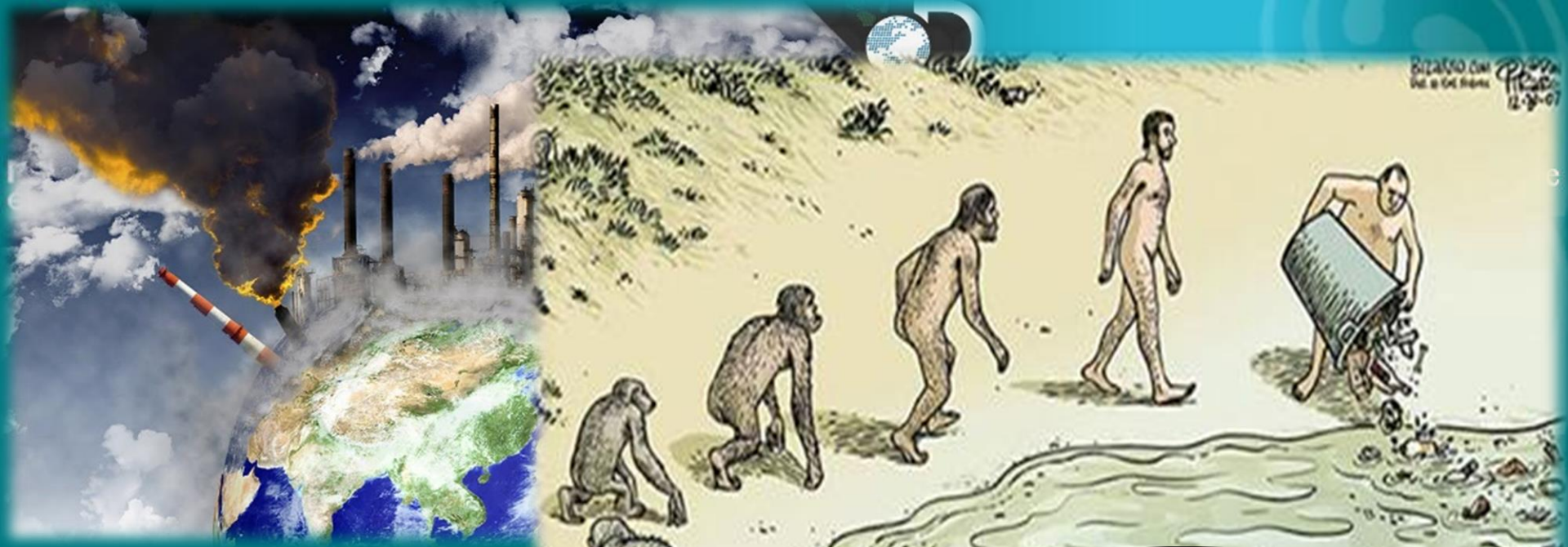
Episode 2 - What Causes Ireland's Weather

Episode 2 – Podcast Notes

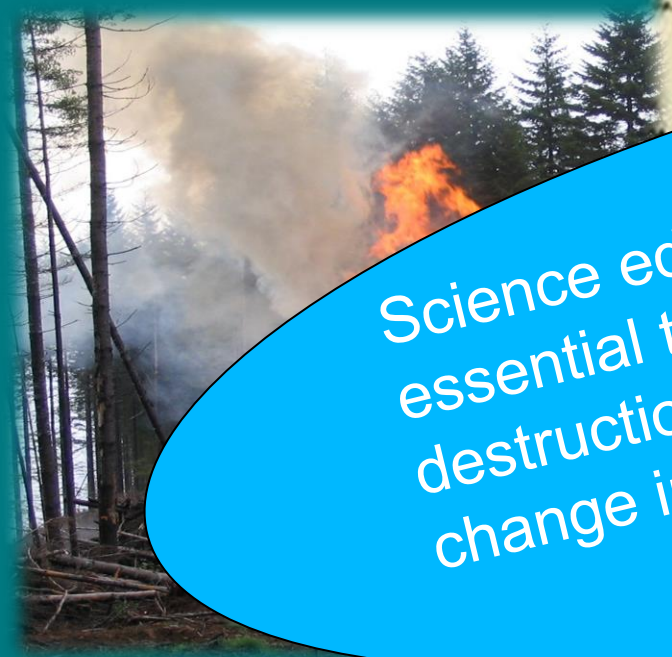
Episode 3 – Hurricanes

Episode 4 - Chaos and Computing in Weather Forecasting

www.met.ie/education/podcast



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Science education and climate literacy is essential to reduce environmental destruction and extreme weather/climate change impacts on Earth