What is MÉRA?

MÉRA, Met Éireann ReAnalysis, is a 35-year (1981-2015) reanalysis of Ireland's climate.

What is climate reanalysis?

Climate reanalysis is a systematic approach used to produce meteorological datasets for climate monitoring and research. They are created using a fixed version of a forecast model and a data assimilation system which utilises historical observations and they produce parameters that are physically consistent and often not routinely observed. Thus, climate reanalyses have the potential to extend the knowledge gained from current observation networks.

What format are the reanalysis data in?

MÉRA data is available in GRIB file format.

This format is designed for storing and distributing weather data. GRIB stands for "General Regularly distributed Information in Binary form". GRIB is a binary format, and the data is packed to increase storage efficiency.

How do I convert the files to NetCDF format?

Using CDO:

- install CDO: https://code.zmaw.de/projects/cdo/files

- cdo -f nc setgridtype,curvilinear input.filename output.filename

Using NCL:

- install NCL: https://www.ncl.ucar.edu

- use the ncl_convert2nc command to carry out the GRIB->NetCDF conversion (https://www.ncl.ucar.edu/Applications/griball.shtml)

Where can I download the data?

1-month sample of some of the data (in GRIB 1 format) can be found below:

- mean sea level pressure
- 2 m temperature
- 10 m wind - u component
- 10 m wind - v component

To arrange a download of MÉRA data please contact the MÉRA team, e-mail mera@met.ie.

What parameters are available?

A full list of parameters is available here

File name convention:

MERA_PRODYEAR_YYYY_MM_PAR_TYP_LEV_TRI_DATA

YYYY: Year (%Y, four-digit)

MM: Month (%m, two-digit)

The following parameters are detailed in the PDF file:

PAR: GRIB1 parameter indicator (indicatorOfParameter)

TYP: GRIB1 level type indicator (indicatorOfTypeOfLevel)

LEV: GRIB1 level indicator (level)

TRI: GRIB1 time range indicator (timeRangeIndicator)

DATA: ANALYSIS/FC3hr/FC33hr - see "**What's in each file?**" question

What's in each file (analysis, 3hr, 33hr)?

ANALYSIS: For each parameter, these files consist of a time-series of the parameter at the initial time-step of each data assimilation cycle (i.e. 0h, 3h, ….. , 21h).

FC3hr: For each parameter, these files consist of a time-series of 1h, 2h and 3h forecasts of the parameter for each data assimilation cycle.

FC33hr: For each parameter, these files consist of a time-series of 1h, 2h, …. 33h forecasts of the parameter for the 00 UTC data assimilation cycles.

There is one file of each type per parameter and per calendar month.

How do I cite the MÉRA reanalysis in my publication?

To cite MÉRA please use the following reference: http://www.adv-sci-res.net/14/49/2017/

What is the resolution of the MÉRA data?

The HARMONIE-AROME canonical configuration of the ALADIN-HIRLAM Numerical Weather Prediction System was run on a 2.5 km horizontal grid.

What licence does the data come under?

When will the full dataset become available?

MÉRA data is now available. To arrange a download of MÉRA data please contact the MÉRA team, e-mail mera@met.ie.