A Database of Optimal Integration Times for Lagrangian Studies of Atmospheric Moisture Sources and Sinks

Raquel Nieto (rnieto@uvigo.es) and Luis Gimeno (l.gimeno@uvigo.es)

Environmental Physics Laboratory | Faculty of Science - University of Vigo
Campus As Lagoas, 32004 Ourense, Spain

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= **Readme file** | R. Nieto | Last update: 17/10/2018
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SHORT OVERVIEW:

Lagrangian methods for estimating sources and sinks of water vapour have increased in importance in recent years, with hundreds of publications over the past decade on this topic. Results derived from these approaches are, however, very sensitive to the integration time of the trajectories used in the analysis. The most widely used integration time is that derived from the average residence time of water vapour in the atmosphere, normally considered to be around 10 days.

In this database, we provide the **annual and monthly Optimal Integration Times (OPT)**, for a spatial resolution of **0.25º x 0.25º in latitude and longitude** using data from the European Centre for Medium-Range Weather Forecasts (ECMWF) Interim Re-Analysis (ERA-Interim) for the period 1980-2015 for Lagrangian Studies of Atmospheric Moisture Sources and Sinks.
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Description of the Data Files:

There are 13 files, one for the annual OPT, and 12 for monthly PLopt.
The files begins with a header name "OPT", followed by the number of the month ('OPT_MM.nc') or by "ANNUAL" for the climatology ('OPT_ANNUAL.nc').

Data format: NetCDF
File type: NetCDF-3/CDM
Dimensions:
    Longitude = 1440
    Latitude = 720

Variables:

Name	Long Name	type	type	units	Range
longitude	longitude	1D	float	degrees	0 to 359.75
latitude	latitude	1D	float	degrees	90N to 89.75S
optimum	optimum	2D	short	days	longitude x latitude

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