

# Table 1: Global attribute of an eddy track

One file for every eddy track

Nomenclature: eddy\_track\_*ID*.nc with *ID* between 00001 and 99999

Field	Definition	Nomenclature / Units / Remarks
track_AMEDA_ID	ID eddy track number from AMEDA	Between 00001 and 99999
eddy_type	Cyclone or anticyclone	Cyclone=1 / anticyclone=-1
eddy_origin	New eddy or eddy generated by a splitting from an other eddy ID	track_AMEDA_ID of the parent or "0" if spontaneous appearance
eddy_death	Lost eddy or eddy leading to a merging with an other eddy	tracks_AMEDA_ID of the child or "0" if spontaneous disappearance
number_of_detection	Number of detection during the lifetime	#
life_length	Eddy lifetime: total number of days between the first and the last detection	days
date_first_detection, date_last_detection	Dates of the first and the last detection	yyyy-mm-dd
center_lon_min, center_lon_max	East-West maximal extension	East Degrees
center_lat_min, center_lat_max	South-North maximal extension	North Degrees
center_lon_first_detection, center_lon_last_detection	First and last center longitude	East Degrees
center_lat_first_detection, center_lat_last_detection	First and last center latitude	North Degrees
r_max_avg	Mean speed radius (r_max) averaged over the eddy lifetime	km
v_max_avg	Mean maximal velocity (v_max) averaged over the eddy lifetime	m/s
list_of_eddies_which_split	ID of other tracks which splits from the tracked eddy	List of #track_AMEDA_ID
list_of_eddies_which_merge	ID of other tracks that merge with the tracked eddy	List of #track_AMEDA_ID
First profile acquired on	Date of the first colocalised profile	dd-mmm-YYY
Last profil acquired on	Date of the last colocalised profile	dd-mmm-YYY
Profiles processing requirements 1	Only values with "good" or "probably good" quality flags, whatever the mode	
Profiles processing requirements 2	For each profile, at least 20 values, first value < 20 m depth, last value > 300 m depth, no major gaps with depth	
Profiles processing requirements 3	At least 5 profiles in delayed time mode acquired outside eddies, within 150 km and +/- 30 days of the considered profile, are required to compute the background characteristics, and then, the relative anomalies	

## Table 2: Time series variable for an eddy\_track

Field	Definition	Nomenclature/Units /Remarks
time_step(N)	Step of the observation N. The age of the eddy (in days) will then corresponds to time_step(N)-min(time_step).	Days since 01/01/2000
x_cen(N), y_cen(N)	Position of LNAM extrema at N	Degrees East, Degrees North
x_bar(N), y_bar(N)	Barycenter position of the characteristic contour at N	Degrees East, Degrees North
tau_min(N)	Minimal eddy turnover time at N. It corresponds to the minimal looping period of a drifter around the eddy center. This variable is computed from the V-R profile at the eddy center.	Days
n_max(N)	Number of points of the characteristic contour	Contour dimension
x_max(N x n_max), y_max(N x n_max)	Coordinates series of the characteristic contour at N	Degrees East, Degrees North
v_max(N)	Mean azimuthal velocity averaged along the characteristic contours at N The characteristic contour corresponds to the closed streamline which have the maximal value of mean azimuthal velocity.	m/s
r_max(N)	Radius of a circle whose area is equal to that enclosed by the characteristic contour at N (i.e. speed radius)	km
dssh_max(N)	Variation of the ssh between the characteristic contour and the extremum inside this contour at N	cm
aire_max(N)	Area enclosed by the characteristic contour at N	km <sup>2</sup>
ellip_max(N)	Ellipticity of an ellipse fitted on the characteristic contour at N	1-a/b (0 if perfect circle)
theta_max(N)	Angle of the main axis of the ellipse with the latitude axis	radians
Ro(N)	Rossby number	Dimensionless number
VortM(N)	Maximal value of vorticity inside the characteristic contour	s <sup>-1</sup>
n_end(N)	Number of points of the last contour	Contour dimension
x_end(N x n_end), y_end(N x n_end)	Coordinates of the last contour at N	Degrees East, Degrees North
v_end(N)	Averaged velocity along the last contour (i.e. the largest closed streamline surrounding the eddy center) at N	m/s
r_end(N)	Radius of a circle whose area is equal to that enclosed by the last contour at N.	km
dssh_end(N)	Variation of the ssh between the last contour and the extremum inside this contour at N	cm
aire_end(N)	Area enclosed by the last contour at N	km <sup>2</sup>
alpha(N)	steepness parameter associated to the generic function $V^*(r) = r^* \cdot e( (1-(r^*)^{\alpha}) / \alpha )$ used to fit the V-R profile	$V^* = V/v_{max}$ and $r^* = r/r_{max}$ are both dimensionless
n_pro(N)	Number of streamlines j for the V-R profil. The streamline index j satisfy $1 \leq j \leq n_{pro}(N)$ .	Profil dimension
v_pro(N x n_pro)	Mean velocity (Vj) along the streamline j associated to (Rj).	m/s
r_pro(N x n_pro)	Radius (Rj) of a circle whose area is equal to that enclosed by the streamline j along the V-R profil.	km
splitting_ID(N)	track_ID which split from the track at N	#track_AMEDA_ID or "0"
merging_ID(N)	track_ID which merge into the track at N	#track_AMEDA_ID or "0"

## Table 3: Parameters for colocalised argo profiles

Field	Definition	Nomenclature / Units / Remark
Argo_time_step(P)	Day of the profile P acquisition	Days since 01/01/2000
Z(Z)	Standard depth from 0 to 300m every 5m then every 10m to 2000m	m
Argo_ID(P)	DYNED Argo profile unique identifier localised inside the last contour of the eddy tracked at profile P	#profile_ID from DYNED database
ID_float(P)	World Meteorologist Organization Argo float unique identifier at P	#ID
mode(P)	Quality control perform on profile P	R : real time; D : delayed mode; A : real time with adjustment
Bio_float(P)	Bio float index if relevant	1: Chlorophyll and/or Oxygen and/or Nitrate are measured; 0: no bio measurement
Xargo(P), Yargo(P)	Position of the profile P	Degrees East, Degrees North
PTEM(P,Z)	Potential temperature of the profile P	Degrees Celsius
PSAL(P,Z)	Practical salinity of the profile P	-
PDEN(P,Z)	Potential density of the profile P	kg/m <sup>3</sup>
T_background(P,Z)	Potential temperature background of the profile P	Degrees Celsius
S_background(P,Z)	Practical salinity background of the profile P	-
D_background(P,Z)	Potential densitybackground of the profile P	kg/m <sup>3</sup>
background_profiles_number	List of the DYNED Argo profiles unique identifier constituting the background	List of #DYNED_Argo