Name	**Aerosols Optical Thickness @ 865 nm**
Summary	**Aerosols Optical Thickness derived from MERIS observations at global scale**
Identifier	L3_ENV_MER_T865_
Name convention	**Lz_SAT_INS_PRD_TC_TP_yyyymmdd_ZONE_PRJ_PRC_SRLATxSRLON_lm+lM+Lm+LM_xxxx** where: 1. Lz is the product level (L3 for level 3, L4 for combined instrument products) 2. SAT is the satellite acronym (ENV for ENVISAT, SEA for SeaStar, Nxx for NOAA 15, 16 or 17, null for L4 product) 3. INS is the instrument acronym (MER for MERIS, SWF for SeaWiFS, AVH for AVHRR, null for L4 product) 4. PRD is the product type (T865 for Aerosols Optical Thickness at 865 nm) 5. TC is the time coverage (i for instantaneous, j for daily, w for weekly, d for decadal, m for monthly, y for yearly, n for products accumulated on n days or s for accumulation on sliding periods) 6. TP is the time position of the product during the day (not used except for AVHRR products: MO for morning, NO for noon, EV for evening, NI for night) 7. yyyymmdd is the first day of the considered time period 8. ZONE is the name of the area of interest (GLOB for global coverage, EURO for Europe, …) 9. PRJ is the projection (SI for sinusoidal, PC for plate-carrée, …) 10. PRC is the processing centre (ACR for ACRI) 11. SRLATxSRLON is the spatial resolution along latitude and longitude in meters taken at the equator for GLOB or at the center of the product for regional product 12. lm+lM+Lm+LM : is the area covered by the product : latitudes min, max, longitudes min, max. 13. xxxx is equal to 0001 for the average value product
Name Example	L3_ENV_MER_T865_d__20030701_GLOB_SI_ACR_9277x9277_-90+90+-180+180_0001 with extension based on format (e.g. . jpg for JPEG, .nc for netCDF, .hdf for HDF, .xml for XML, …)
Product level	3
Description	Aerosols Optical Thickness at 865 nm over water and land.

Level 2 Algorithm short description	Aerosol optical thickness is derived by two different algorithms depending on the underlying surface, land or water. In both cases however, retrieval of aerosol parameters from spectral measurements relies on the knowledge of the reflectance of the underlying surface for several bands. This allows to split the measured signal into surface and atmosphere contributions. It is then possible to further breakdown the atmosphere signal and determine aerosol properties. Over ocean, these bands are in the near infra-red (779 nm and 865 nm) and in the green (510 nm), while over land – restricted to relatively densely vegetated areas, to ensure this condition – the useful bands are in the blue (412 and 442 nm) and in the red (665 nm). In both algorithms, aerosol parameters determination is based on comparisons of measurements in the above mentioned bands with values extracted from pre-computed look-up tables for a representative set of aerosol models under varying conditions. Those look-up tables, or sub-sets determined according to local conditions, are scanned until the model(s) – and its (their) optical thickness(es) – that best fits the measurements at all bands is (are) found. In a last step, optical thickness at 865 nm is derived either directly, over water the algorithm relies on the measurement at 865 nm, or using the optical properties of the selected model(s) to extrapolate the optical thickness at the measured wavelength to 865 nm (land algorithm is based on measurements in the blue and red parts of the spectrum). **See :** - http://envisat.esa.int/instruments/meris/pdf/atbd_2_15.pdf (land) - http://envisat.esa.int/instruments/meris/pdf/atbd_2_07.pdf (water)
	The level 3 algorithm follows the recommendations of the IOCCG. The algorithm can be briefly described as : $$AVG_i = \frac{1}{N_p}\sum_{n=1}^{Np}\delta_n$$ Where N_p is the number of valid pixels (i.e. assessed as of good quality) in the cell *i*. Similar data-day definition as AVHRR-SeaWiFS

References	Level 2 Processing version : MEGS 7.4 Level 3 Processing version : mklv3 3.2 "Guide to the creation & use of ocean color level 3 product", IOCCG final report, 2004. "MERIS level 2 DPM", issue 7.2, June 2005
Unit	dimensionless
Range	[0,2]
Accuracy	TBD
Format	Image: JPG, data: netCDF, geotiff, metadata: XML
Resolution	One twelfth of a degree in both latitude and longitude at the equator
Product characteristics	Product : MERIS AOT at 865 nm mean quantity Auxiliary products: index of the bins, standard deviation, number of data per pixel, min, max.
Distribution	http://www.globcolour.info/
Validation References	**See :** - http://envisat.esa.int/instruments/meris/pdf/atbd_2_15.pdf (land) - http://envisat.esa.int/instruments/meris/pdf/atbd_2_07.pdf (water)