

CATDS Ocean Salinity Level 3 products – Differences & Pros/Cons

	CATDS CPDC	CATDS CEC-IFREMER v2	CATDS CEC-LOCEAN DEBIAS v3
T _b	L1c Reconstructed on EASE2 grid (>=25km)	L1b Reconstructed on EASE grid	L1c Reconstructed on EASE2 grid (>=25km)
SSS retrieval	L2OS v6 (Dwell-line; iterative retrieval) +: T _b weighted by radiometric accuracy; wind adjusted & theoretical error estimate -: complex	SSS(T _{bx} +T _{by}) +: not affected by Faraday rotation -: no check of dwell line consistency	L2OS v6 (Dwell-line; iterative retrieval) +: T _b weighted by radiometric accuracy; wind adjusted & theoretical error estimate -: complex
Wind-model	Model 1	Model 2	Model 1
Calibration	CSQ3 product: Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) + CSQ3: use SMOS self consistency for systematic errors correction - CSQ3: possible remaining RFI contamination	Single OTT + daily 5°x5° adjustment wrt SSS climato +: single OTT calibration -: need additional bias correction (in time and space) that mask part of interannual variability: see level 4 product for an improved bias correction (using ISAS maps)	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) + use SMOS self consistency for systematic errors correction +SST correction related to the use of Klein and Swift dielectric constant -: possible remaining RFI contamination -: At high latitude, imperfect correction due to ice contamination:
Filtering	Similar to L2OS v6 flags	interorbit consistency / RFI % +: more refined than L2OS flags	3 sigma self-consistency analysis Error field (=Chi2*SSS_error)
Region of FOV considered	EAFFOV (+/-400km from swath centre) +: keep large incidence angle variation (=> better wind adjustment) -: more suspicious T _b in EAFFOV than in AFFOV	AFFOV only +: avoid suspicious T _b in EAFFOV -: reduced number of T _b s	EAFFOV (~+/-400km from swath centre) +: keep large incidence angle variation (=> better wind adjustment) and numerous T _b in AFFOV -: more suspicious T _b in EAFFOV than in AFFOV
Temporal sampling	1 Day	Daily, 10-days, Monthly	4days
Grid sampling	25km & 50km	0.25°, 0.5°, 1°	25km
Average	Simple average : 10 days, Monthly running means ; ~50km (SMOS original spatial footprint) & 100km - no interorbit consistency check	Simple average after thorough filtering of inconsistent SSS + interorbit consistency check	9day and 18 day FWHM gaussian smoothing, median filtering over nearest neighbors (~70km effective spatial resolution) +interdwell consistency checks
Format	Netcdf – EASE2 grid	Netcdf – rectangular grid	Netcdf – EASE2 grid
Access	ftp://ext-catds-cpdc:catds2010@ftp.ifremer.fr/ or www.catds.fr/sipad/	ftp://ext-catds-cecos-ifremer:catds2010@ftp.ifremer.fr/	ftp://ext-catds-cecos-ifremer:catds2010@ftp.ifremer.fr/
Period	Reprocessed: Jan 2010-April2019 / Near Real time	June 2010-December 2014	January 2010-December 2017

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Updated	Everyday, with a +5 days delay	Occasionally	Occasionally (update foreseen in 2019)
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Acronyms:

AFFOV: Alias Free Field of View

EAAFFOV: Extended Alias Free Field of View

ESA: European Space Agency

EASE-grid: Equal-Area Scalable Earth Grid

ISEA-grid: Icosahedron Snyder Equal Area Grid

Tb: Brightness temperature ; Tbx+Tby: first Stokes parameter