

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

	OPERATIONAL PRODUCTS		EXPERIMENTAL RESEARCH PRODUCTS		
	CATDS CPDC RE07 & NRT since end May 2021 (CSQ3 product)	CATDS CPDC L3G	CATDS CEC-LOCEAN DEBIAS V9	CATDS CEC ARCTIC V2	CATDS CEC SMOS+SMAP HR (8 regions)
SMOS T _b	L1c Reconstructed on EASE2 grid (>=25km)	L1c Reconstructed on EASE2 grid (>=25km)	L1c Reconstructed on EASE2 grid (>=25km)	L1c Reconstructed on ISEA grid (15km)	L1c Reconstructed on EASE2 grid (>=25km)
SSS retrieval	L2OS v7 (Dwell-line; iterative retrieval) <i>+: T_b weighted by radiometric accuracy; wind adjusted & theoretical error estimate</i>	L2OS v7 (Dwell-line; iterative retrieval) <i>+: T_b weighted by radiometric accuracy; wind adjusted & theoretical error estimate</i>	L2OS v7 (Dwell-line; iterative retrieval) <i>+: T_b weighted by radiometric accuracy; wind adjusted & theoretical error estimate</i>	SSS estimated from ACARD retrieved with ESA L2OS V7 (without wind speed retrieval)	SMOS L2OS v7 SMAP RSS v4
Wind-model	Model 1	Model 1	Model 1	Model 1	Model 1
Calibration	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) <i>+ use SMOS self consistency for systematic errors correction</i> <i>- possible remaining RFI contamination</i> <i>-: At high latitude, imperfect correction due to ice contamination</i>	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) <i>+ use SMOS self consistency for systematic errors correction</i> <i>+Ice mitigation from Acard filtering</i> <i>+High WS removal, improvement in the South hemisphere.</i> <i>-: possible remaining RFI contamination</i> <i>-: At high latitude, imperfect correction due to ice contamination:</i>	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) <i>+ use SMOS self consistency for systematic errors correction</i> <i>+Ice mitigation from Acard filtering</i> <i>+High WS removal, improvement in the South hemisphere.</i> <i>-: possible remaining RFI contamination</i> <i>-: At high latitude, imperfect correction due to ice contamination:</i>	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) <i>+ use SMOS self consistency for systematic errors correction</i> <i>+Ice mitigation from Acard filtering</i>	Variable OTT and removal of systematic SSS error (land contamination and seasonal/latitudinal bias) <i>+ use SMOS+SMAP self consistency for systematic errors correction</i> <i>+High WS removal, improvement in the South hemisphere.</i> <i>-: possible remaining RFI contamination</i>
Filtering	Similar to L2OS v7 flags	3 sigma self-consistency analysis	3 sigma self-consistency analysis	3 sigma self-consistency analysis	3 sigma self-consistency analysis

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Region of FOV considered	EAFFOV (+/-400km from swath centre) <i>+: keep large incidence angle variation (=> better wind adjustment) -: more suspicious Tb in EAFFOV than in AFFOV</i>	EAFFOV (+/-400km from swath centre) <i>+: keep large incidence angle variation (=> better wind adjustment) -: more suspicious Tb in EAFFOV than in AFFOV</i>	EAFFOV (~+/-400km from swath centre) <i>+: keep large incidence angle variation (=> better wind adjustment) and numerous Tb in AFFOV -: more suspicious Tb in EAFFOV than in AFFOV</i>	EAFFOV (~+/-400km from swath centre) <i>+: keep large incidence angle variation (=> better wind adjustment) and numerous Tb in AFFOV -: more suspicious Tb in EAFFOV than in AFFOV</i>	EAFFOV (~+/-400km from swath centre) <i>+: keep large incidence angle variation (=> better wind adjustment) and numerous Tb in AFFOV -: more suspicious Tb in EAFFOV than in AFFOV</i>
Temporal sampling	1 Day	1 Day	4 days	4 days	1 Day
Grid sampling	25km & 50km	25km	25km	25km	25km
Average	Simple average : 10 days, Monthly running means ; ~50km (SMOS original spatial footprint) & 100km	9day FWHM gaussian smoothing, spatial smoothing over nearest neighbors (~70km effective spatial resolution)	9day and 18 day FWHM gaussian smoothing, spatial smoothing over nearest neighbors (~70km effective spatial resolution)	9day and 18 day FWHM gaussian smoothing, spatial smoothing over nearest neighbors (~70km effective spatial resolution)	Temporal multiscale exponential smoothing, spatial smoothing over nearest neighbors (~70km effective spatial resolution)
Format	Netcdf – EASE2 grid	Netcdf – EASE2 grid	Netcdf – EASE2 grid	Netcdf – EASE2 polar grid	Netcdf – EASE2 grid
Access	ftp://ext-catds-cpdc:catds2010@ftp.ifremer.fr/ or https://data.catds.fr/cpdc/ or www.catds.fr/sipad/	ftp://ext-catds-cpdc:catds2010@ftp.ifremer.fr/ or https://data.catds.fr/cpdc/ or www.catds.fr/sipad/	ftp://ext-catds-cecos-ifremer:catds2010@ftp.ifremer.fr/ or https://data.catds.fr/cecos-locean/	ftp://ext-catds-cecos-ifremer:catds2010@ftp.ifremer.fr/ or https://data.catds.fr/cecos-locean/	ftp://ext-catds-cecos-ifremer:catds2010@ftp.ifremer.fr/ or https://data.catds.fr/cecos-locean/
Period	Reprocessed: Jan 2010-May 2021 / Near Real time	Reprocessed: Jan 2010-May 2021/update with 25days delay	Jan 2010-Dec 2023	July 2010-Aug 2023	Jan 2010-Nov 2021
Updated	Everyday, with a +5 days delay (NRT products also available with a <1 day delay)	Everyday, with 25 days delay	Yearly (update foreseen beginning of 2025)	TBD	TBD

Acronyms:

AFFOV: Alias Free Field of View

EAFFOV: 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 ; Tb_x+Tb_y: first Stokes parameter