

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 v8	CATDS CEC SMOS+SMAP HR (8 regions)
SMOS T_b	L1c Reconstructed on EASE2 grid (≥ 25 km)	L1c Reconstructed on EASE2 grid (≥ 25 km)	L1c Reconstructed on EASE2 grid (≥ 25 km)	L1c Reconstructed on EASE2 grid (≥ 25 km)
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>	SMOS L2OS v7 SMAP RSS v4
Wind-model	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>-: 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+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
Region of FOV considered	EAFFOV (± 400 km from swath centre) <i>+: keep large incidence angle variation (\Rightarrow better wind adjustment)</i> <i>-: more suspicious T_b in EAFFOV than in AFFOV</i>	EAFFOV (± 400 km from swath centre) <i>+: keep large incidence angle variation (\Rightarrow better wind adjustment)</i> <i>-: more suspicious T_b in EAFFOV than in AFFOV</i>	EAFFOV ($\sim \pm 400$ km from swath centre) <i>+: keep large incidence angle variation (\Rightarrow better wind adjustment) and numerous T_b in AFFOV</i> <i>-: more suspicious T_b in EAFFOV than in AFFOV</i>	EAFFOV ($\sim \pm 400$ km from swath centre) <i>+: keep large incidence angle variation (\Rightarrow better wind adjustment) and numerous T_b in AFFOV</i> <i>-: more suspicious T_b in EAFFOV than in AFFOV</i>

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Temporal sampling	1 Day	1 Day	4days	1 Day
Grid sampling	25km & 50km	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)	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 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
Period	Reprocessed: Jan 2010-May 2021 / Near Real time	Reprocessed: Jan 2010-May 2021 / regular update with ~one month delay	January 2010-December 2022	January 2010-November 2021
Updated	Everyday, with a +5 days delay (NRT products also available with a <1 day delay)	Everyday, with a +25 days delay	Yearly (update foreseen in 2024)	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 ; Tbx+Tby: first Stokes parameter