

Available Products

The main goal of Barcelona Expert Center (BEC) is to generate higher added-value products of interest for a broad range of users. With this aim we offer the following variables:

Ocean variables

Sea Surface Salinity

These products have been generated from SMOS Level 1B products provided by ESA using a new methodological approach to cope with land and RFI contamination. This methodology is known as Debiased non-Bayesian and it is described at [[Olmedo2017](#)]

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
Arctic v3.1 [1]					
L3	25 km x 25 km	9-day	EASE 2.0 North	50° to 90° latitude	2011-2019
Arctic v4 [2]					
L3	25 km x 25 km	9-day	EASE 2.0 North	45° to 90° latitude	2011-2023
Baltic v1.0 [3]					
L3	0.25°x0.25°	9-day	Rectangular	8° to 30.5° longitude 53.5° to 68° latitude	Feb 2011-2019
L4	0.05°x0.05°	Daily	Rectangular	8° to 30.5° longitude 53.5° to 68° latitude	Feb 2011-2019
Black Sea v1.0 [4]					

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
L2 ASC/DES	0.25°x0.25°	Daily	Rectangular	26° to 42° longitude 39° to 48° latitude	2011-2020
L3	0.25°x0.25°	9-day	Rectangular	26° to 42° longitude 39° to 48° latitude	2011-2020
L4	0.05°x0.0505°	Daily	Rectangular	26° to 42° longitude 39° to 48° latitude	2011-2019
Global v2.0 [5]					
L3	0.25°x0.25°	9-day	Rectangular	all	2011-May 2021
L4	0.05°x0.05°	Daily	Rectangular	all	2011-May 2021
Mediterranean and North Atlantic v2.0 [6]					
L3	0.25°x0.25°	9-day	Rectangular	-50°E to 38°E longitude	2011-2016
L4	0.05°x0.05°	Daily	Rectangular	all	2011-2016
Southern Ocean v1 [7]					
L3	25 km x 25 km	9-day	EASE 2.0 South	-90° to -30° latitude	2011-march 2023
L4	6.25 km x 6.25 km	Daily	EASE-SL	-30° to -90° latitude	jan 2011 – march 2023

[Olmedo2017] E. Olmedo, J. Martínez, A. Turiel, J. Ballabrera-Poy, M. Portabella, *Debiased non-Bayesian retrieval: A novel approach to SMOS Sea Surface Salinity*, Remote Sensing of Environment, Volume 193, 2017, Pages 103-126, ISSN

0034-4257, [10.1016/j.rse.2017.02.023](https://doi.org/10.1016/j.rse.2017.02.023).

Documentation:

[1] **Arctic v3.1:** Barcelona Expert Center (2021). BEC-SSS-PD-SSS-Arctic-v3.1. Products Description, BEC 2021-03-09. Issue 1.0 [Download](#)

[2] **Arctic v4:** Barcelona Expert Center (2024). BEC-SSS-PD-SSS-Arctic-v4. Products Description, BEC 2024-11-22. Issue 1.0 [Download](#)

[3] **Baltic v1.0:** Barcelona Expert Center (2021). BEC_PD_SSS_Baltic_L3_L4. Products Description, BEC 2021-07-29. Issue 1.0 [Download](#)

[4] **Black Sea v1.0:** Barcelona Expert Center (2021). BEC-PD-SSS-Black-L2-L3-L4. Products Description, BEC 2021-10-25. Issue 1.0 [Download](#)

[5] **Global v2.0:** Barcelona Expert Center (2020). BEC-SMOS-PD-SSSv2-v1.pdf. Products Description, BEC 2020-05-11. Issue 1.0 [Download](#)

[6] **Mediterranean and North Atlantic v2.0:** Barcelona Expert Center (2019). BEC-SMOS-0003-PD-SSS-MED. Products Description, BEC 2019-08-02. Issue 1.0 [Download](#)

[7] **Southern Ocean v1:** Barcelona Expert Center (2024). BEC-SMOS-SSS-Southern-Ocean-L3. Products Description, BEC 2024-11-19. Issue 1.0 [Download](#)

Barcelona Expert Center (2025). BEC-SMOS-SSS-Southern-Ocean-L4. Products Description, BEC 2025-12-18.

Sea Ice Concentration

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
Arctic v1.0 [1]					
L3	25 km x 25 km	daily	EASE NL	50° to 90° latitude	2011-2019

Documentation:

[1] **Arctic v1.0**: Barcelona Expert Center (2018). BEC-SMOS-0001-PD-Ice. Products Description, BEC 2018-07-20. Issue 1.1 [Download](#)

Singularity Exponents

This product is useful for front identification, eddy tracking, and assessing mesoscale activity.

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
Singularity Exponents					
L4	25° x 25°	daily	EASE NL	all	2010-Present

Colored Detrital Matter

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
Danube Mouth [1]					

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
L4	0.05° x 0x0505°	Daily	Rectangular	44° to 45.5° latitude 28° to 30.5° longitude	2011-2019 winter and spring seasons

Documentation:

[1] **CDM v1.0:** Barcelona Expert Center (2021). BEC-SMOS-PD-CDM-L4. Products Description, BEC 2021-10-27. Issue 1.1 [Download](#)

Land variables

Soil moisture

Product type	Spatial Resolution	Temporal Resolution	Grid	Spatial Coverage	Temporal Coverage
Global v4.0 [1]					
L3	25km x 25km	Daily	EASE 2.0 Global	all	Jun 2010-April 2024
L3	25km x 25km	3-day	EASE 2.0 Global	all	Jun 2010-April 2024
Europe and Mediterranean v6.0 [1]					
L4 REP	1km x 1km	Daily	EASE 2.0 Global	-11° to 40° longitude 28° to 72° latitude	June 2010 – October 2022
L4 REP	1km x 1km	3-day	EASE 2.0 Global	-11° to 40° longitude 28° to 72° latitude	June 2010 – October 2022

Documentation:

[1] **SMOS Soil Moisture:** Barcelona Expert Center (2020). BEC-

SM0S-PD-SM-L3v4-L4v6. Products Description, BEC 2020-05-19.
Issue 1.0 [Download](#)

All our products are available through our FTP service and can be visualized through our web map service: