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Seasonal upwelling–dust controls on export production in the Canary Current System revealed by Lagrangian particle tracking

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Table S1 – Sources of satellite-driven Earth Observation time-series data processed for the sediment-trap deployment period at CB and M1 and for the Lagrangian analysis.

Parameter	Acronym	Units	Sensor	Product	Resolution	Source	Reference	Last date Accessed
Chlorophyll	Chl-*a*	mg m^{-3}	OC-CCI	V6-daily	4 km	http://doi.org/10.5285/5011d22aae5a4671b0cbc7d05c56c4f0	Sathyendranath et al. (2019)	26-06-2026
Primary Production	PP	mg C m^{-2} d^{-1}	Multisensor	daily	4km	https://primus.eofrom.space/	Smyth et al. 2005	26-06-2026
Particle Inorganic Carbon	PIC	mol m^{-3}	MODIS-Aqua	L3-daily	4km	https://doi.org/10.5067/AQUA/MODIS/L3M/PIC/2022.0	Gordon et al., 2001; Balch et al., 2005 ; Hopkins et al., 2015	26-06-2026
Sea Surface Temperature	SST	ºC	OSTIA	L4-daily	0.05º	https://doi.org/10.48670/moi-00168	Good et al. (2020), Worsfold et al. (2024)	26-06-2026
Daily Precipitation	DPP	mm day^{-1}	multiple	L3-daily	0.25º	https://doi.org/10.5067/TRMM/TMPA/DAY-E/7	Goddard Earth Sciences Data and Information Services Center (2016); Huffman et al. (2007); Xie and Arkin (1997)	26-06-2026
Mixed Layer Depth	MLD	m	NOBM (model)	daily	0.67x1.25°	https://disc.gsfc.nasa.gov/datasets/NOBM_MON_R2017/summary	Gregg and Rousseaux, (2017)	26-06-2026
Aeorosol Optical Depth (865)	AOD	unitless	Multisensor	daily	4km	GlobColour - Home	Gordon, 1997	26-06-2026
Upwelling Index	UI	K	OSTIA SST	daily	0.051º	https://primus.eofrom.space/	N/A	26-06-2026
Sea Surface Height	SSH	m	Multiple	daily	0.125 x 0.125º	https://doi.org/10.48670/moi-00148	Global Ocean Gridded L 4 Sea Surface Heights And Derived Variables Reprocessed 1993 Ongoing. E.U. Copernicus Marine Service Information (CMEMS). Marine Data Store (MDS). DOI: 10.48670/ moi-00148	26-06-2026

Table S2. Annual means and ranges of fluxes and relative contributions of major coccolith taxa, $CaCO_3$, organic matter, $bSiO_2$, and lithogenic fractions measured in situ from sediment traps M1 and CB along with environmental time-series data from satellite remote sensing at both trap mooring sites (particle flux data from Korte et al., 2017; Guerreiro et al., 2019, 2021).

	M1 (12°N/23°W)				CB (21°N/20°W)			
Coccolith Sinking Taxa	**Fluxes (coccoliths m^{-2} d^{-1} $*10^7$)**		**Percentages (%)**		**Fluxes (coccoliths m^{-2} d^{-1} $*10^7$)**		**Percentages (%)**	
	Mean	Min-Max	Mean	Min-Max	Mean	Min-Max	Mean	Min-Max
Emiliania huxleyi	8	3 - 16	16	8 - 21	29	2 - 99	34	15 - 51
Gephyrocapsa spp.	4	1 - 8	9	5 - 19	7	3 - 16	13	4 - 29
Calcisdicus leptoporus	1	0.1 - 8	1	0.4 - 3	3	0.4 - 12	4	2 - 8
Helicosphaera spp.	4	1 - 8	8	6 - 12	2	0.2 - 8	2	1 - 4
Rhabdosphaera spp. & *Umbellosphaera* spp.	3	0.3 - 8	6	1 - 10	4	0.3 - 20	5	2 - 14
Florisphaera profunda & *Gladiolithus flabellatus*	23	10 - 42	48	39 - 56	19	5 - 50	26	14 - 35
Umbillicosphaera spp.	2	0.6 - 6	5	1 - 8	4	1 - 12	5	3 - 8
Other taxa	4	2 - 9	8	5 - 14	10	1 - 33	12	6 - 21
Total	50	21 - 91			79	15 - 215		
Sediment Bulk Composition	**Fluxes (mg m^{-2} d^{-1} $*10^7$)**		**Percentages (%)**		**Fluxes (mg m^{-2} d^{-1} $*10^7$)**		**Percentages (%)**	
	Mean	Min-Max	Mean	Min-Max	Mean	Min-Max	Mean	Min-Max
$CaCO_3$	38	23 - 85	34	21 - 45	92	3 - 297	57	27 - 83
Organic matter	15	10 - 28	10	8 - 13	17	2 - 35	13	6 - 29
$bSiO_2$	11	6 - 17	14	11 - 17	5	0.1 - 20	4	1 - 12
Lithogenic flyx (unspecified*)	48	33 - 71	43	30 - 58	38	1 - 114	27	5 - 58
Total Mass	112	77 - 200			150	6 - 423		
Satellite-driven Parameters	Mean	Min-Max			Mean	Min-Max		
Aerosol Optical Depth (AOD 865, unitless)	0.17	0.1 - 0.2			0.14	0.1 - 25		
Daily Precipitation (mm/d)	2.6	0 - 11			0.2	0 - 2		
Sea Surface Temperature (SST, ℃)	26	24 - 29			22	18 - 26		
Mixed Layer Depth (MLD, m)	23	11 - 35			45	20 - 73		
Chlorophyll-a (Chl-*a* , µg/L)	0.16	0.13 - 0.2			0.62	0.3 - 1.5		
Particulate Inorganic Carbon (PIC, mol/L$*10^{-8}$)	2	1.2 - 6			8	0 - 32		
Primary Production (PP, mg C/m^2 /d)	722	603 - 885			1145	674 - 2335		

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