Supplement of Biogeosciences, 15, 1579–1606, 2018
https://doi.org/10.5194/bg-15-1579-2018-supplement

Biogeosciences Open Access EGU

Supplement of

Coupling physics and biogeochemistry thanks to high-resolution observations of the phytoplankton community structure in the northwestern Mediterranean Sea

Pierre Marrec et al.

Correspondence to: Pierre Marrec (pierre.marrec@mio.osupytheas.fr)

Table S1: Comparison of *Prochlorococcus*, *Synechococcus* and 2µm-bead abundances measured with the benchtop FACSCalibur and the CytoSense flow cytometers on five replicates.

Sample	*Prochlorococcus* (cell.cm^{-3})		*Synechococcus* (cell.cm^{-3})		2µm beads (beads.cm^{-3})	
	FACS	CS	FACS	CS	FACS	CS
#1	18436	18236	27766	27906	5646	5376
#2	17762	17764	27153	26758	5371	5329
#3	17469	17102	27117	27564	5362	5613
#4	17759	17953	27797	27852	5553	5679
#5	18017	17291	28214	27050	5734	5443
Mean	17888	17669	27610	27426	5533	5488
StdDev	270	357	380	418	133	126
	t.test p=0,4326		t.test p=0,568		t.test p=0,573	

Figure S1: Temperature (°C), salinity, Chl-*a* (µg.dm^{-3}, converted from fluorescence) and density profiles (kg.m^{-3}) at 6 stations.

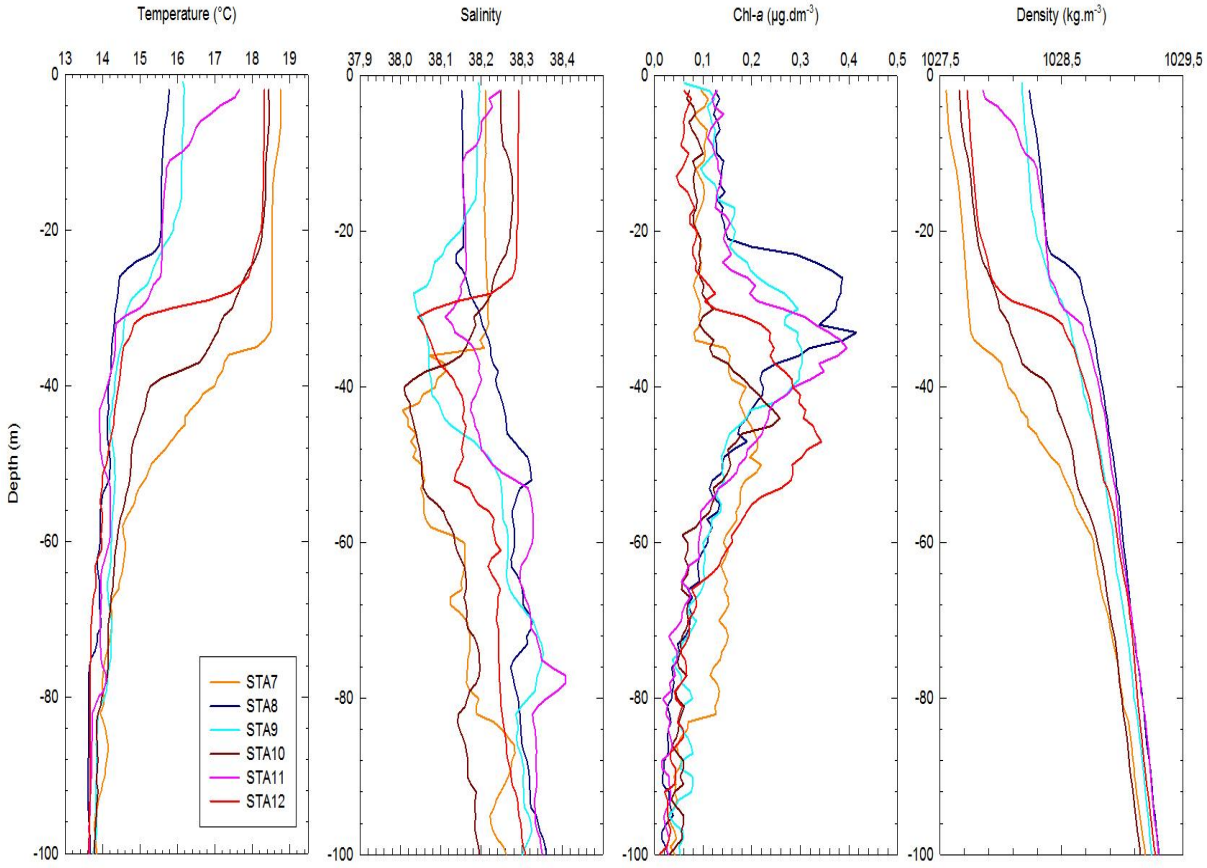

Figure S2: Temperature (°C), salinity, fluorescence (a.u.) and PAR (µE.m^{-2}.d^{-1}) profiles recorded by the CTD-Rosette, with associated *Prochlorococcus*, *Synechococcus* and picoeukaryotes abundances (cells.cm^{-3}) and nitrate, nitrite, silicate and phosphate concentrations (µmol.dm^{-3}) at Station 11.

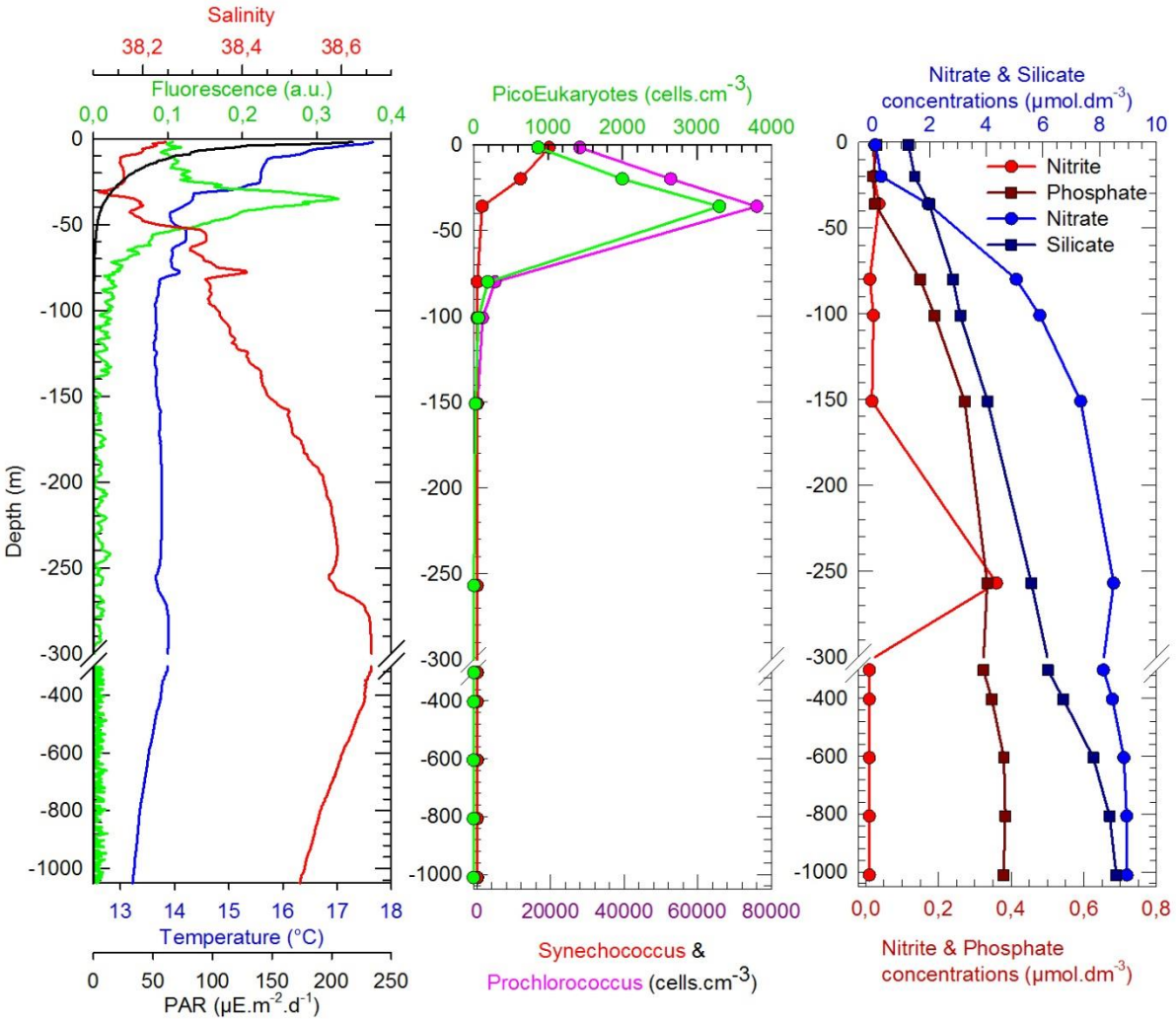

Figure S3: Mean abundances and standard deviation (green circles and associated error bars) during and at the vicinity of fixed stations 1 to 11 of *Prochlorococcus*, *Synechococcus* and picoeukaryotes (cells.cm^{-3}) by the CytoSense AFCM in surface waters compared to abundances recorded by benchtop conventional flow cytometry (FACScalibur) at the 2 first depths (from 1 to 5 m depth) during PASTIS-HVR vertical samplings (yellow triangles).

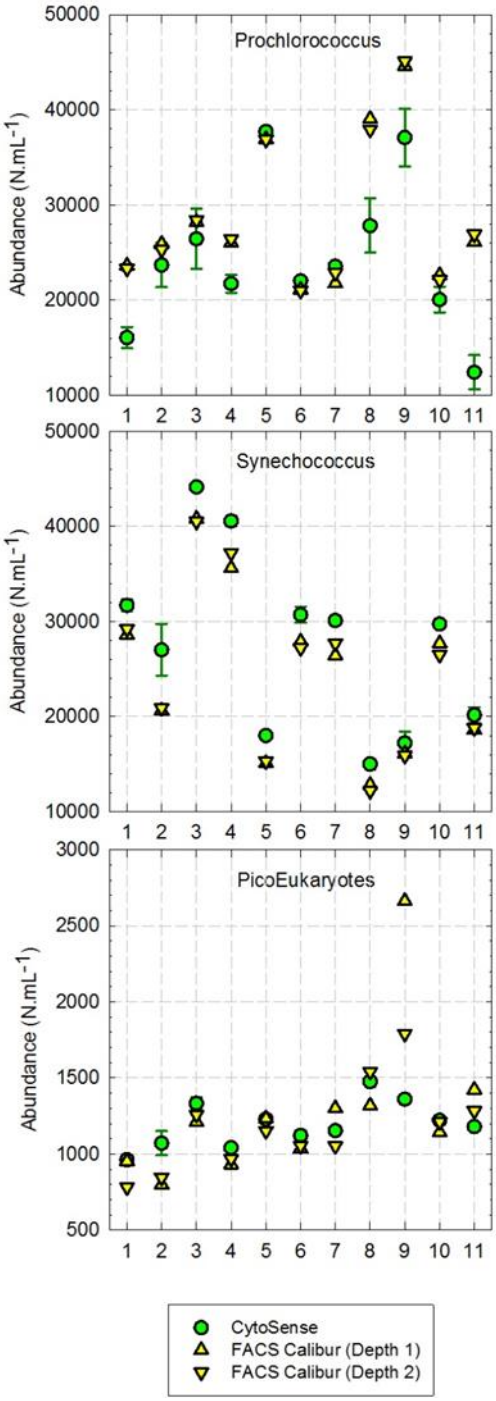

Figure S4: Mean SWS and FLR of *Prochlorococcus* and *Synechococcus* recorded by conventional benchtop flow cytometry at the fixed stations 6 to 11 from PASTIS-HVR vertical samplings and at Station 11 (SWS : black circles, FLR : with squares).

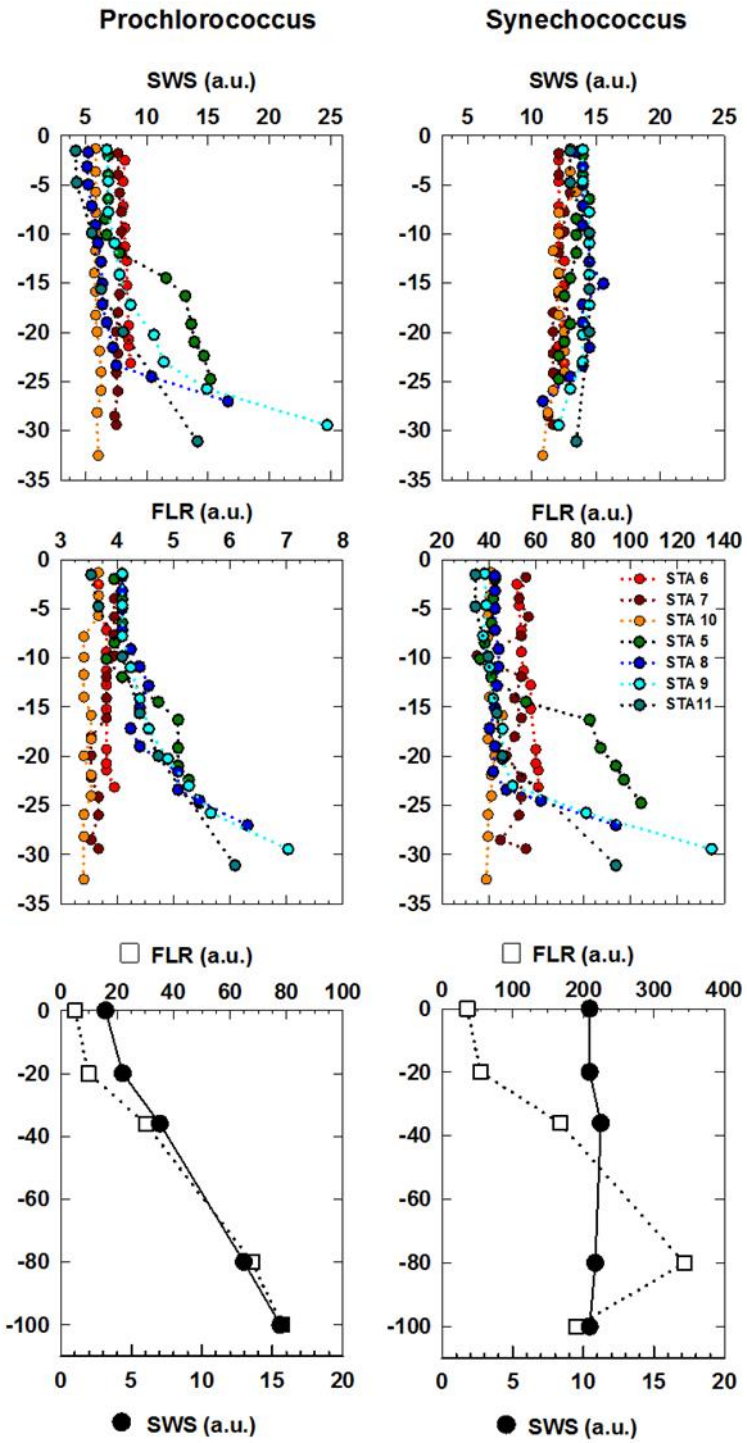

Figure S5: FLR distribution of Prochlorococcus populations at STA7 (warm boundary waters, in red) and at STA9 (cold core waters, in blue), expressed in terms of cell density. Data comes from conventional flow-cytometry measurements performed from 30 m depth to the surface using the PASTIS pumping system to collect the water at various depths. The dotted lines represent the mean of the normal distribution for Prochlorococcus surface ecotype (HL – High-Light) and the dashed line represents the mean of the normal distribution for Prochlorococcus deep ecotype (LL – Low-Light). The same representations for the deep-cast STA11 – CTD-rosette also reflects the presence of at least 2 different Prochlorococcus populations discriminated from the distribution of their FLR values. Co-occurrence of both ecotypes can be observed at STA9 and STA11 but a clear distinction of the FLR distribution of each ecotype is not possible.