

Table S2. Results of ANOSIM and SIMPER analyses, performed per each study area and per physical-chemical, microbial abundances and metabolism separately.

ANOSIM results

Variables	Physical-Chemical				Microbial abundances					Microbial metabolism				
	R Statistic	Signif. level	Pairwise Tests	Signif. level	R Statistic	Signif. level	Pairwise Tests	Signif. level	R Statistic	Signif. level	Pairwise Tests	Signif. level		
A area														
among depths	0.711	0.1%			0.484	0.1%				0.508	0.1%			
			Surface, CDW	0.831	0.1%		Surface, CDW	0.482	0.2%			Surface, Deep	0.647	0.1%
			Surface, Deep	0.921	0.1%		Surface, Deep	0.679	0.1%			DCM, Deep	0.750	0.1%
			DCM, CDW	0.782	0.1%		DCM, CDW	0.782	0.2%					
			DCM, Deep	0.936	0.1%		DCM, Deep	0.737	0.1%					
among stations	0.015	61.0%			0.099	1.3%				0.048	85.1%			
C area														
among depths	0.519	0.1%			0.370	0.1%				0.489	0.1%			
			Surface, CDW	0.914	0.1%		Surface, Deep	0.432	0.1%			Surface, Deep	0.516	0.1%
			Surface, Deep	0.592	0.1%		DCM, Deep	0.639	0.1%			DCM, Deep	0.646	0.1%
			DCM, CDW	0.937	0.5%							CDW, Deep	0.675	0.1%
			DCM, Deep	0.691	0.1%									
among stations	0.217	0.1%			0.262	0.1%				0.006	42.9%			

SIMPER results

A area					C area				
	Variable	Av.Sq.Distance	Sq.Distance/SD	Contrib%		Variable	Av.Sq.Distance	Sq.Distance/SD	Contrib%
Physical-Chemical					Physical-Chemical				
Surface vs CDW	POC	5.02E+04	1.82	95.89	Surface, CDW	NO2+NO3	6.28	1.30	18.22
Surface vs Deep	POC	5.79E+04	1.95	96.06		DO	4.21	3.34	12.23
DCM vs CDW	POC	5.79E+04	1.95	96.06	Surface, Deep	S	4.87	3.84	9.85
DCM vs Deep	POC	9.12E+04	3.00	96.71		POC	3.57	1.00	7.23
					DCM, CDW	F	5.80	1.84	15.48
						PN	4.84	1.32	12.91
					DCM, Deep	PN	6.12	1.54	9.95
						F	5.93	1.89	9.66
Microbial abundances					Microbial abundances				
Surface vs CDW	Culturable bacte	8.03E+06	0.50	100.00	Surface vs Deep	TPP	1.06	12.05	12.05
Surface vs Deep	Culturable bacte	1.47E+06	0.48	100.00		Picoeuk	0.81	11.69	23.74
DCM vs CDW	Culturable bacte	8.16E+06	0.51	100.00		LNA	0.86	11.38	35.13
DCM vs Deep	Culturable bacte	1.73E+06	0.47	100.00					
					DCM vs Deep	Biomass	5.86	1.63	11.60
						TPP	5.26	1.26	10.41
						HNA	5.14	0.98	10.16
						% CTC	5.00	0.46	9.90
Microbial metabolism					Microbial metabolism				
Surface vs Deep	LAP	3.22	2.02	16.04	Surface, Deep	Aminoacids	3.51	1.08	16.51
	complex C	3.06	0.80	15.23		Carbohydrates	3.36	1.11	15.80
DCM vs Deep	Proteolytic posit	4.55	2.17	17.76		Amines	3.09	1.15	14.57
	Phosphatase pos	4.16	1.60	16.24					
					DCM, Deep	P-C compounds	4.05	0.63	15.85
						Carboxyl.acids	3.74	1.20	14.64
						Phosphatase positive	3.40	1.24	13.32
						Proteolytic positive	3.40	1.25	13.32
					CDW, Deep	Complex C	4.63	1.40	23.45
						Phosphatase positive	4.15	1.30	21.03