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N_2 fixation in eddies of the eastern tropical South Pacific Ocean

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Table S1: N_2 and C fixation rates measured during M90 and M91 cruises

cruise	station ID	latitude [°N]	longitude [°W]	depth [m]	C fixation [µmol L^{-1} d^{-1}]	N_2 fixation [nmol L^{-1} d^{-1}]
M90	M90_1639-1	-16.749	-83.999	502	0.022	0.00
M90	M90_1639-1	-16.749	-83.999	450	0.247	1.42
M90	M90_1639-1	-16.749	-83.999	348	0.228	1.89
M90	M90_1639-1	-16.749	-83.999	300	0.026	0.21
M90	M90_1639-2	-16.749	-83.999	201	0.016	0.30
M90	M90_1639-2	-16.749	-83.999	150	0.006	0.51
M90	M90_1639-2	-16.749	-83.999	125	0.009	0.25
M90	M90_1639-2	-16.749	-83.999	40	0.251	0.18
M90	M90_1639-2	-16.749	-83.999	5	0.017	0.31
M90	M90_1646-1	-17.165	-83.581	500.3	0.018	0.04
M90	M90_1646-1	-17.165	-83.581	399.9	0.006	0.17
M90	M90_1646-1	-17.165	-83.581	380.4	0.030	0.13
M90	M90_1646-1	-17.165	-83.581	299.9	0.004	0.18
M90	M90_1646-2	-17.166	-83.583	200	0.008	0.38
M90	M90_1646-2	-17.166	-83.583	150	0.048	0.22
M90	M90_1646-2	-17.166	-83.583	125	0.014	0.05
M90	M90_1646-2	-17.166	-83.583	45	0.015	0.17
M90	M90_1646-2	-17.166	-83.583	5	0.019	0.73
M90	M90_1656-1	-15.998	-79.5	500	0.005	0.10
M90	M90_1656-1	-15.998	-79.5	400	0.021	0.13
M90	M90_1656-1	-15.998	-79.5	350	0.013	0.09
M90	M90_1656-1	-15.998	-79.5	300	0.012	0.16
M90	M90_1656-1	-15.998	-79.5	300	0.006	0.21
M90	M90_1656-1	-15.998	-79.5	200	0.009	0.36
M90	M90_1656-2	-15.999	-79.5	150	0.010	0.18
M90	M90_1656-2	-15.999	-79.5	100	0.008	0.31
M90	M90_1656-2	-15.999	-79.5	40	0.017	0.23
M90	M90_1656-2	-15.999	-79.5	5	0.016	1.48
M90	M90_1659-1	-16.333	-80.5	500	0.005	0.46
M90	M90_1659-1	-16.333	-80.5	400	0.005	0.13
M90	M90_1659-2	-16.333	-80.5	300	0.015	0.19
M90	M90_1659-2	-16.333	-80.5	250	0.016	0.16
M90	M90_1659-2	-16.333	-80.5	200	0.023	0.29
M90	M90_1659-2	-16.333	-80.5	150	0.015	0.15
M90	M90_1659-2	-16.333	-80.5	100	0.010	0.24
M90	M90_1659-2	-16.333	-80.5	40	0.018	0.39
M90	M90_1659-2	-16.333	-80.5	5	0.013	0.50
M90	M90_1664-1	-16.749	-78.001	500	0.004	0.13
M90	M90_1664-1	-16.749	-78.001	400	0.003	0.26
M90	M90_1664-2	-16.749	-78	350	0.014	0.26
M90	M90_1664-2	-16.749	-78	300	0.008	0.38

M90	M90_1664-2	-16.749	-78	200		0.48
M90	M90_1664-2	-16.749	-78	150	0.036	0.76
M90	M90_1664-2	-16.749	-78	100	0.020	0.73
M90	M90_1664-2	-16.749	-78	40	0.015	0.52
M90	M90_1664-2	-16.749	-78	5	0.026	3.76
M90	M90_1668-2	-16.75	-76	5	0.027	2.23
M90	M90_1668-2	-16.75	-76	40	0.007	0.15
M90	M90_1668-2	-16.75	-76	100	0.008	0.65
M90	M90_1668-2	-16.75	-76	150	0.009	0.78
M90	M90_1668-1	-16.749	-76	200	0.017	0.59
M90	M90_1668-1	-16.749	-76	300	0.015	0.28
M90	M90_1668-1	-16.749	-76	350	0.007	0.23
M90	M90_1668-1	-16.749	-76	400	0.008	0.28
M90	M90_1668-1	-16.749	-76	500	0.027	
M90	M90_1672-2	-16.232	-75.666	5	0.034	1.34
M90	M90_1672-2	-16.232	-75.666	100	0.066	0.86
M90	M90_1672-2	-16.232	-75.666	150	0.011	0.90
M90	M90_1672-1	-16.232	-75.666	200	0.041	0.75
M90	M90_1672-1	-16.232	-75.666	250	0.507	4.39
M90	M90_1672-1	-16.232	-75.666	300	0.174	N/A
M90	M90_1672-1	-16.232	-75.666	350	0.025	N/A
M90	M90_1672-1	-16.232	-75.666	400	0.282	0.25
M90	M90_1672-1	-16.232	-75.666	500	0.018	0.30
M91	M91_1773-2	-16.155	-76.807	299.2	0	0.30
M91	M91_1773-2	-16.155	-76.807	198.6	0.002	1.04
M91	M91_1773-3	-16.155	-76.823	101.9	0	2.45
M91	M91_1773-3	-16.155	-76.823	51.3	0.003	2.13
M91	M91_1773-3	-16.155	-76.823	7.4	0.01	3.45
M91	M91_1777-1	-15.519	-75.6	300.7	0.038	0.56
M91	M91_1777-4	-15.54	-75.614	200.9	0.025	0.46
M91	M91_1777-4	-15.54	-75.614	101.3	0.012	1.13
M91	M91_1777-4	-15.54	-75.614	51.4	0.017	2.32
M91	M91_1777-4	-15.54	-75.614	6.6	0.022	2.52

Table S2: qPCR-based quantification of *nifH* clusters P1-P8 as defined by Löscher et al. (2014) , a Crocosphaera-like diazotroph (UCYN-B) and total *nifH* [transcripts L^{-1}] as sum of the quantified clusters.

Eddy	depth [m]	P1	P2	P3	P4	P5	P6	P7	P8	UCYN-B	total nifH
A1-rim	400	0	0	0	0	0	0	0	0	0	0
	350	0	0	0	0	0	0	0	0	0	0
	250	0	0	0	0	0	0	0	0	0	0
	100	0	172	0	0	0	0	0	803	0	975
	60	0	427	0	0	0	0	0	641	0	1068
	5	0	0	0	0	0	0	0	2383	0	2383
A1-center	400	0	0	0	0	0	0	0	0	0	0
	250	0	0	0	0	0	0	51	1376	0	1427
	200	0	683	0	0	0	0	34	1701	0	2418
	150	0	943	0	0	0	0	52	26	0	1021
	100	0	420	0	0	0	0	20	83	0	523
	5	0	0	0	0	0	0	21	219	0	240
B-rim	502	0	0	0	0	0	0	0	0	0	674
	450	0	0	0	0	0	0	0	0	0	0
	348	0	0	0	0	0	0	260	307	0	568
	300	0	0	0	0	0	0	231	120	0	351
	201	0	127	0	0	0	0	134	259	21	541
	150	0	0	0	0	0	0	0	0	0	0
	125	0	0	0	0	0	0	0	0	0	0
	5	0	0	0	0	0	0	32	673	0	705
B-center	399.9	0	0	0	0	0	0	0	1443	49	1492
	380.4	0	0	0	0	0	0	362	1360	12	1735
	299.9	0	69	0	0	0	0	409	904	18	1400
	200	0	177	0	0	0	0	114	230	0	521
	150	0	153	0	0	0	0	0	414	0	567
	125	0	0	0	0	0	0	0	0	6	6
	5	0	0	0	0	0	0	0	12	348	360
C-rim	500	0	0	0	0	0	0	0	15	0	15
	350	0	0	0	0	0	0	0	84	0	84
	300	0	0	0	0	0	0	0	101	0	101
	200	0	0	0	0	0	0	0	223	0	223
	150	0	355	0	0	0	0	0	44	1043	1442
	100	0	188	0	0	0	0	0	0	565	753
	40	0	0	0	0	0	0	0	18	2351	2369
	5	0	0	0	0	0	0	0	14	3049	3064
C-center	500	0	0	0	0	0	0	0	18	355	374
	400	0	0	0	0	0	0	0	47	188	235
	350	0	0	0	0	0	0	0	29	0	29
	200	0	0	0	0	0	0	0	0	88	88
	150	0	169	0	0	0	0	0	47	-27	189
	100	0	211	0	0	0	0	0	18	316	544
	40	0	0	0	0	0	0	0	47	770	816
	5	0	0	0	0	0	0	0	51	1220	1271
A2-rim	499.4	0	0	0	0	0	0	0	73	0	73
	398.2	0	0	0	0	0	0	0	0	0	0
	299.2	0	0	0	0	0	0	0	0	0	0
	250.6	0	0	0	0	0	0	0	299	0	299
	198.6	0	0	0	0	0	0	0	422	0	422
	150.9	0	0	0	404	0	0	0	1289	0	1693
	101.9	0	0	0	305	0	0	0	725	0	1030
	51.3	0	0	0	960	0	0	0	471	0	1431
	7.4	0	0	0	143	0	0	0	3461	0	3604
A2-center	6.6	0	0	0	0	0	0	66	1729	0	1795
	51.4	0	604	0	453	0	0	0	345	0	1401
	101.3	0	0	0	1261	0	0	0	1305	0	2566
	151	0	265	0	735	0	0	0	1884	0	2884
	200.9	0	0	0	0	0	0	0	2291	0	2291
	251.2	0	0	0	0	0	0	0	129	0	129
	300.1	0	0	0	0	0	0	0	328	0	328
	400.8	0	0	0	0	0	0	0	0	0	0
	499.9	0	0	0	0	0	0	0	0	0	0

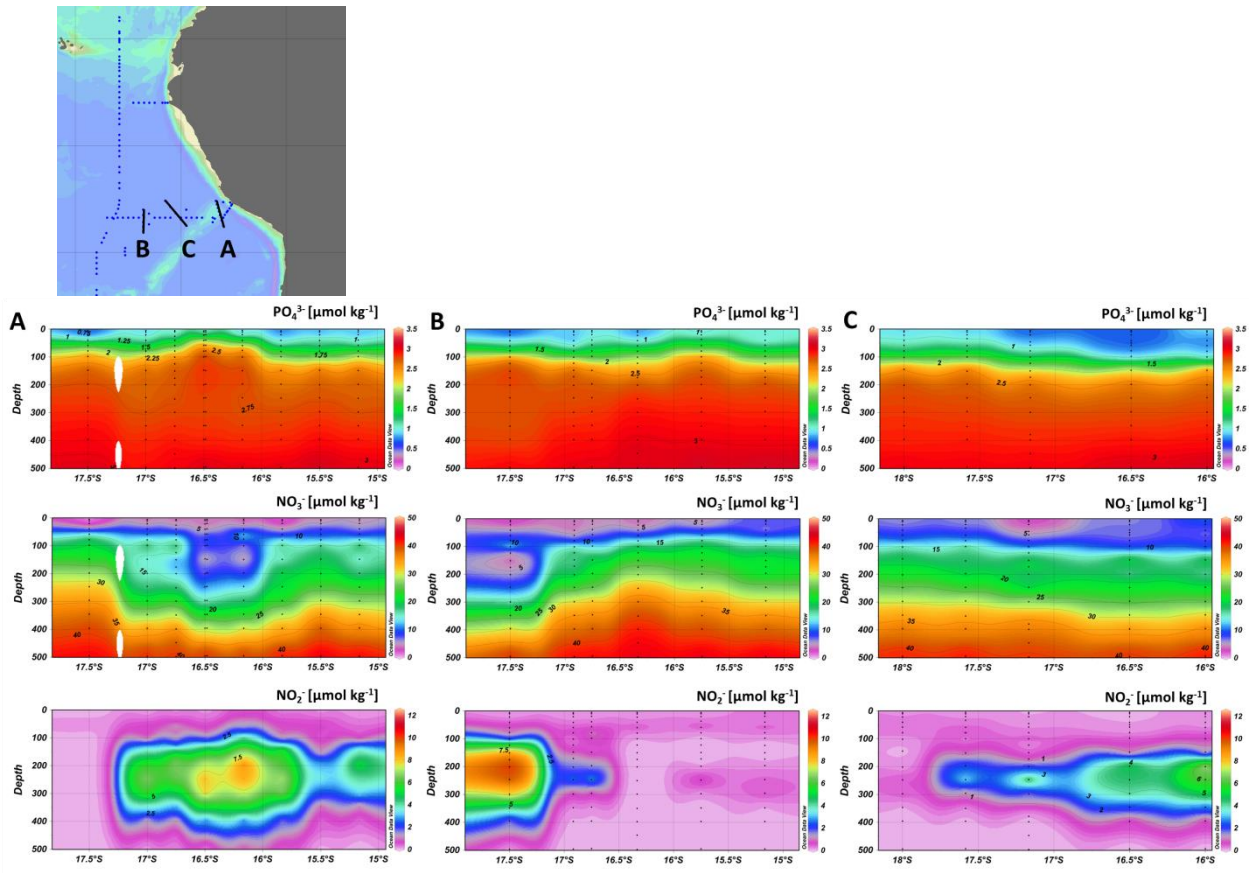

Figure S1: Phosphate, nitrate, nitrite in eddies **A, B** and **C** along three sections during the M90 cruise.

References

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