

Anaerobic ammonium oxidation in the oxygen-deficient waters off northern Chile

Bo Thamdrup, Marlene Mark Jensen, Tage Dalsgaard, Osvaldo Ulloa, Laura Farías, and Ruben Escribano

Web Appendix 2

Table A2. Rates of $^{14}\text{N}^{15}\text{N}$ and $^{15}\text{N}^{15}\text{N}$ production ($R_{14\ 15}$ and $R_{15\ 15} \pm \text{SE}$), ^{15}N mole fractions (F_{ammonium} , F_{nitrite} , F_{nitrate}), and derived rates of anammox and denitrification. Rates significantly greater than zero ($p < 0.05$) are shown in bold.

Incubation	Station	Depth (m)	$R_{14\ 15}$	$R_{15\ 15}$	F_{ammonium}	Anammox	Denitrification	
$^{15}\text{NH}_4^+$	Sta. 1, 21 March	30	0.11 ± 0.11	0.009 ± 0.029	0.96	0.11 ± 0.12	n.a.	
		60	0.20 ± 0.07	0.022 ± 0.024	0.98	0.20 ± 0.07	n.a.	
		100	0.20 ± 0.06	−0.011 ± 0.019	0.96	0.20 ± 0.07	n.a.	
		150	0.12 ± 0.07	−0.006 ± 0.023	0.98	0.12 ± 0.07	n.a.	
		250	−0.02 ± 0.08	−0.007 ± 0.028	0.98	−0.02 ± 0.08	n.a.	
		350	0.01 ± 0.09	0.025 ± 0.014	0.98	0.01 ± 0.09	n.a.	
	Sta. 1, 24 March	55	0.73 ± 0.05	0.007 ± 0.011	0.98	0.74 ± 0.06	n.a.	
		150	0.16 ± 0.08	0.002 ± 0.014	0.99	0.16 ± 0.08	n.a.	
	Sta. 2, 24 March	55	0.47 ± 0.06	0.017 ± 0.015	0.98	0.48 ± 0.06	n.a.	
		150	−0.07 ± 0.08	0.004 ± 0.018	0.98	−0.07 ± 0.08	n.a.	
	$^{15}\text{NO}_2^-$	Sta. 1, 21 March	30	0.04 ± 0.20	−0.029 ± 0.048	F_{nitrite} 0.94	0.04 ± 0.21	−0.03 ± 0.05
			60	0.29 ± 0.08	0.021 ± 0.020	0.57	0.46 ± 0.15	0.07 ± 0.06
			100	0.03 ± 0.09	−0.005 ± 0.022	0.42	0.07 ± 0.22	−0.03 ± 0.12
			150	0.07 ± 0.07	−0.017 ± 0.024	0.38	0.19 ± 0.20	−0.12 ± 0.17
250			−0.05 ± 0.08	0.005 ± 0.016	0.40	−0.13 ± 0.19	0.03 ± 0.10	
350			0.05 ± 0.07	−0.029 ± 0.017	0.91	0.06 ± 0.08	−0.04 ± 0.02	
Sta. 1, 24 March		55	0.46 ± 0.14	0.008 ± 0.050	0.38	1.14 ± 0.59	0.06 ± 0.33	
		150	−0.07 ± 0.07	−0.002 ± 0.020	0.39	−0.16 ± 0.25	−0.01 ± 0.13	
Sta. 2, 24 March		55	0.25 ± 0.08	0.029 ± 0.017	0.46	0.40 ± 0.20	0.13 ± 0.08	
		150	0.07 ± 0.15	−0.011 ± 0.026	0.37	0.29 ± 0.47	−0.08 ± 0.19	
$^{15}\text{NO}_2^- + ^{14}\text{NH}_4^+$		Sta. 1, 21 March	60	0.40 ± 0.17	0.009 ± 0.044	0.57	0.68 ± 0.31	0.03 ± 0.13
			150	−0.03 ± 0.08	0.012 ± 0.025	0.38	−0.19 ± 0.30	0.08 ± 0.17
			350	0.06 ± 0.06	0.005 ± 0.010	0.91	0.07 ± 0.06	0.01 ± 0.01
		Sta. 1, 24 March	55	0.38 ± 0.09	0.104 ± 0.023	0.39	0.14 ± 0.30	0.69 ± 0.15
	150		0.08 ± 0.06	−0.007 ± 0.017	0.39	0.28 ± 0.21	−0.05 ± 0.11	
	Sta. 2, 24 March	55	0.29 ± 0.06	0.010 ± 0.013	0.46	0.58 ± 0.15	0.05 ± 0.06	
150		0.17 ± 0.11	0.013 ± 0.014	0.36	0.35 ± 0.34	0.10 ± 0.11		
$^{15}\text{NO}_3^-$	Sta. 1, 21 March	30	0.14 ± 0.23	0.045 ± 0.032	F_{nitrate} 0.29	n.a.	0.54 ± 0.38	
		60	−0.04 ± 0.06	−0.009 ± 0.019	0.37	n.a.	−0.07 ± 0.14	
		100	−0.02 ± 0.09	−0.017 ± 0.020	0.43	n.a.	−0.09 ± 0.11	
		150	0.02 ± 0.07	0.015 ± 0.022	0.42	n.a.	0.08 ± 0.13	
		250	0.02 ± 0.06	0.010 ± 0.018	0.36	n.a.	0.07 ± 0.13	
		350	−0.07 ± 0.08	−0.009 ± 0.015	0.22	n.a.	−0.19 ± 0.32	
	Sta. 1, 24 March	55	0.27 ± 0.15	0.082 ± 0.026	0.58	n.a.	0.24 ± 0.08	
		150	0.15 ± 0.11	−0.001 ± 0.019	0.38	n.a.	−0.01 ± 0.13	
	Sta. 2, 24 March	55	0.25 ± 0.08	0.029 ± 0.017	0.39	n.a.	0.19 ± 0.12	
		150	0.11 ± 0.09	0.030 ± 0.026	0.40	n.a.	0.19 ± 0.17	