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Supporting Information for

Relating dimethyl sulphide and methanethiol fluxes to surface biota in the South-West Pacific using shipboard Air-Sea Interface Tanks

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	EXP A	EXP B	EXP C

	Frontal	Subantarctic	Subtropical
Chlorophyll biomass			
Total Chl-a (mg m^{-3})	1.87 ± 0.34	0.54 ± 0.12	1.88 ± 0.30
Chl-a >20 um (mg m^{-3})	0.98 ± 0.23	0.13 ± 0.06	1.17 ± 0.25
Chl-a 2-20 um (mg m^{-3})	0.29 ± 0.03	0.14 ± 0.03	0.25 ± 0.06
Chl-a <2 um (mg m^{-3})	0.26 ± 0.08	0.18 ± 0.03	0.29 ± 0.05
Phytoplankton Size Class			
Nanophytoplankton (cells mL^{-1})	$22.22 \times 10^2 \pm 3.99 \times 10^2$	$11.93 \times 10^2 \pm 1.16 \times 10^2$	$12.27 \times 10^2 \pm 1.57 \times 10^2$
Picophytoplankton (cells mL^{-1})	$86.81 \times 10^2 \pm 21.61 \times 10^2$	$153.48 \times 10^2 \pm 11.23 \times 10^2$	$160.60 \times 10^2 \pm 73.34 \times 10^2$
Synechococcus (cells mL^{-1})	$325.14 \times 10^2 \pm 56.95 \times 10^2$	$634.17 \times 10^2 \pm 58.70 \times 10^2$	$413.14 \times 10^2 \pm 75.74 \times 10^2$
Bacteria (cells mL^{-1})	$33549.83 \times 10^2 \pm 10761.14 \times 10^2$	$22768.92 \times 10^2 \pm 1555.96 \times 10^2$	$24359.37 \times 10^2 \pm 1374.92 \times 10^2$
Phytoplankton biomass			
Total > 5um (mg C^{-3})	50.97 ± 15.42	12.12 ± 4.32	19.10 ± 7.27
Dinoflagellates (mg C^{-3})	17.72 ± 14.89	6.46 ± 1.74	5.11 ± 1.08
Diatoms (mg C^{-3})	12.84 ± 11.89	4.17 ± 4.40	12.41 ± 7.23
Flagellates (mg C^{-3})	2.04 ± 0.88	1.49 ± 0.40	1.58 ± 0.22
Dissolved and Particulate Organics			
Particulate Nitrogen (mg C^{-3})	$0.56 \times 10^2 \pm 0.06 \times 10^2$	$0.24 \times 10^2 \pm 0.04 \times 10^2$	$0.31 \times 10^2 \pm 0.04 \times 10^2$
Particulate Carbon (mg C^{-3})	$3.94 \times 10^2 \pm 0.46 \times 10^2$	$1.19 \times 10^2 \pm 0.17 \times 10^2$	$2.04 \times 10^2 \pm 0.51 \times 10^2$
CDOM (ppbv)	0.23 ± 0.02	0.16 ± 0.01	0.24 ± 0.01
TCHO (nmol/L)	$24.57 \times 10^2 \pm 5.92 \times 10^2$	$6.81 \times 10^2 \pm 1.22 \times 10^2$	$14.90 \times 10^2 \pm 5.94 \times 10^2$

Total amino-acids (TAA) (nmol L^{-1})	$22.95 \times 10^2 \pm 9.27 \times 10^2$	$11.49 \times 10^2 \pm 4.71 \times 10^2$	$12.73 \times 10^2 \pm 6.78 \times 10^2$
Iodide (nmol L^{-1})	9.70 ± 2.77	21.93 ± 5.11	30.85 ± 5.44
Iodate (nmol L^{-1})	141.58 ± 23.22	204.03 ± 44.32	388.15 ± 53.67
TOC (µM)	120.27 ± 1.51	81.19 ± 1.04	103.51 ± 1.61
DMS (nmol L^{-1})	6.45 ± 2.58	3.16 ± 1.30	2.19 ± 0.59
DMSP (nmol L^{-1})	90.73 ± 11.98	55.12 ± 5.00	44.97 ± 8.91
Headspace concentrations			
DMS-Control (ppbv)	2.48 ± 1.66	1.64 ± 1.38	0.51 ± 0.14
DMS-O_3 (ppbv)	1.15 ± 0.43	1.03 ± 0.57	0.45 ± 0.12
MeSH-Control (ppbv)	1.48 ± 0.36	1.21 ± 0.58	0.71 ± 0.15
MeSH-O_3 (ppbv)	0.51 ± 0.23	0.34 ± 0.21	0.02 ± 0.05
Meteorological parameters			
Sea Surface Water Temperature (°C)	13.72 ± 0.40	14.10 ± 0.16	16.04 ± 1.29
Air temperature (°C)	11.68 ± 0.79	13.5 ± 0.78	14.49 ± 1.24
Relative Humidity (%)	68.63 ± 17.17	87.18 ± 6.08	78.43 ± 10.55

Table S.1. Mean concentrations (± 1 S.D.) for biogeochemical parameters and ASIT's headspace concentrations during the three ASIT experiments.

PAR (µmol m^{-2} s^{-1})	r^2	DMS flux (ng m^{-2} s^{-1})	MeSH flux (ng m^{-2} s^{-1})
real-time	corr PAR ASIT (n=9)	0.00	0
	corr PAR ASIT O_3 (n=9)	0.00	0.03
h+2	corr PAR ASIT (n=9)	0.02	0.01

	corr PAR ASIT O_3 (n=9)	0.09	0.07
h+4	corr PAR ASIT (n=9)	0.09	0.11
	corr PAR ASIT O_3 (n=9)	0.16	0.12
h+6	corr PAR ASIT (n=9)	0.12	0.14
	corr PAR ASIT O_3 (n=9)	0.15	0.16
h+8	corr PAR ASIT (n=9)	0.11	0.14
	corr PAR ASIT O_3 (n=9)	0.06	0.06
h+10	corr PAR ASIT (n=9)	0.00	0.00
	corr PAR ASIT O_3 (n=9)	0.07	0.08
h+12	corr PAR ASIT (n=9)	0.00	0.00
	corr PAR ASIT O_3 (n=9)	0.00	0.00
Temperature (°C)	Both ASITs (n=13)	0.05	0.00

Table S.2. Correlation of DMS and MeSH fluxes (ng m^{-2} s^{-1}) with PAR (µmol m^{-2} s^{-1}) and shifted PAR every two hours and temperature (°C).