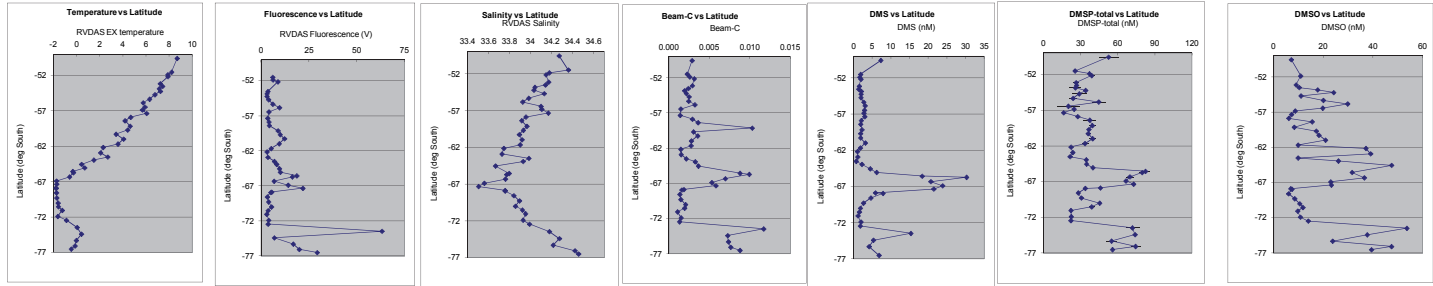


Kiene-Kieber Transect DATA NBP-0409

Related Publications:

Kiene, R.P., Kieber, D.J., Slezak, D., Toole, D.A., del Valle, D.A., Biggrove, J., Brinkley, J., Rellinger, A., 2007. Distribution and cycling of dimethylsulfide, dimethylsulfoniopropionate, and dimethylsulfoxide during spring and early summer in the Southern Ocean south of New Zealand. *Aquat. Sci.* 305-319.

All transect samples are from underway pump system with intake at 4 m.



Transect samples

Sample #	Local date & time	Julian Day	Time (GMT)	Decimal Lat	Decimal Lon	Salinity	Ext SW temp	Fluor (V)	Beam C	pCO2	[DMS] (nM)	DMS err	DMSP-tot (nM)	DMSP err	DMSOd (nM)	DMSO err	DMS/DMSP1	notes	
T-1	12/20/2004 7:22	354	18:30	-49.561	175.1	34.27	8.68		0.00285984		7.3		52.52	8.03	7.03		0.139	CTD Sta 1	
T-2	12/20/2004 19:43	355	6:44	-51.492	175.151	34.358	8.207	5.994	0.002262814	354.3	1.88		25.51	0.45				0.074	
T-3	12/20/2004 22:11	355	9:10	-51.875	175.257	34.176	7.88	6.153	0.002560213		386.8	1.65	37.11		10.83			0.044	
T-4	12/20/2004 23:55	355	10:57	-52.148	175.332	34.145	7.886	8.712	0.003118462		400.4	1.96	38.87	2.02				0.050	
T-5	12/21/2004 6:17	355	17:17	-53.134		34.171	7.225		0.002902828			1.52	26.34	2.06	8.96		0.058	CTD Sta 2	
T-6	12/21/2004 9:30	355	20:28	-53.521	175.718	34.14	7.424	3.508	0.00239		405	1.37	26.65	1.04	10.23			0.051	
T-7	12/21/2004 11:40	356	22:40	-53.847	175.810	34.04	7.136	3.074	0.001925615		398.1	2.07	25.67	4.60	17.70			0.081	
T-8	12/21/2004 14:02	356	1:02	-54.222	175.917	34.03	7.23	2.996	0.002136031		357.7	2	34.05	1.03	24.14			0.059	
T-9	12/21/2004 17:02	356	4:02	-54.703	176.056	34.129	6.759	3.881	0.002475016		364.9	1.96	28.86	5.63	10.96			0.068	
T-10	12/21/2004 20:47	356	7:49	-55.331	176.244	33.981	6.301	6.074	0.002432486		365.3	2.71	23.82	3.25	19.93			0.114	
T-11	12/21/2004 23:55	356	10:55	-55.839	176.396	33.924	5.74	9.602	0.003205042		344.2	3.07	44.63	5.49	29.74			0.069	
T-12	12/22/2004 3:30	356	14:31	-56.440	176.575	34.098	5.901	4.013	0.001466559		354.8	2.92	19.98	9.02	19.69			0.146	
T-13	12/22/2004 6:00	356	17:00	-56.843	176.7031	34.105	5.68					2.76	24.72	0.62	8.59		0.112	CTD Sta 3	
T-14	12/22/2004 9:40	356	20:40	-57.342	176.8568	34.168	6.044	3.429	0.001383658		375.3	2.99	16.26	0.52	7.13			0.184	
T-15	12/22/2004 12:52	356	23:52	-57.878	177.0280	33.955	4.673	4.058	0.002902828		370.7	2.04	27.64	0.03	6.01			0.074	
T-16	12/22/2004 15:54	357	2:46	-58.378	177.1872	33.914	4.18	4.217	0.003596988		343.3	1.905	37.36	5.16	15.43			0.051	
T-17	12/22/2004 20:00	357	7:00	-59.143	177.4362	33.964	4.627	8.825	0.010299049		358.1	2.242	39.36	2.51	8.26			0.057	
T-18	12/22/2004 23:00	357	10:00	-59.685	177.6154	33.93	4.408	9.917	0.003032069		345	1.851	36.66	0.11	17.07			0.050	
T-19	12/23/2004 2:11	357	13:12	-60.268	177.8157	33.892	3.406	12.19	0.003553249		334.7	1.867	36.00	1.98	18.18			0.052	
T-20	12/23/2004 6:14	357	17:16	-60.077	178.0549	33.917	4.052	9.394	0.002774003		334.8	3.161	39.71	2.63	20.82		0.080	CTD Sta 4	
T-21	12/23/2004 10:35	357	21:35	-61.068	178.1735	33.899	3.571	5.185	0.002731154		345.8	1.815	33.51	2.49	9.78			0.054	
T-22	12/23/2004 13:14	358	0:14	-62.150	178.1674	33.744	2.287	3.047	0.001466559		344	1.031	22.22	0.44	37.12			0.046	
T-23	12/23/2004 17:34	358	4:35	-62.912	178.1713	33.727	2.072	3.485	0.001508075		337.9	1.114	23.61	0.00	39			0.047	
T-24	12/23/2004 21:00	358	8:00	-63.504	178.1720	33.983	2.692	6.907	0.002136031		362.9	0.703	21.43	0.97	9.75			0.033	
T-25	12/23/2004 23:32	358	10:32	-63.931	178.1690	33.928	1.48	8.113	0.003248402		359.4	2.24	34.43	1.00	25.99			0.065	
T-26	12/24/2004 3:01	358	14:03	-64.544	178.1718	33.665	0.426	9.545	0.003640776		334.5	4.463	34.75	0.83	47.47			0.128	
T-27	12/24/2004 6:00	358	17:00	-65.045	178.1877		0.7	10				6.16	39.84	1.10			0.155	CTD Sta 5	
T-28	12/24/2004 9:26	358	20:26	-65.555	178.1481	33.795	-0.339	18.634	0.008776023		293.2	18.368	82.29	3.57	31.53			0.223	
T-28 *	12/24/2004 10:23	358	21:23	-65.720	178.1762	33.771	-0.273	16.302	0.009938454		282.9	30.244	79.65	2.62			0.380	extra: DMS&DMSPt only	
T-29	12/24/2004 13:55	359	0:55	-66.321	178.1702	33.76	-0.614	6.747	0.006974135		319.6	20.696	69.79	2.85	36.48		0.297	First major rotten ice	
T-30	12/24/2004 19:35	359	6:35	-66.896	178.0894	33.559	-1.735	14.079	0.005295568		317.2	23.854	66.59	0.27	22.96		0.358		
T-31	12/24/2004 23:41	359	10:41	-67.338	178.1462	33.504	-1.725	21.756	0.005801031		305.3	21.47	1.39	72.73	0.00	23.17		0.295	
T-32	12/25/2004 4:50	359	15:57	-67.873	178.0142	33.757	-1.791	5.506	0.001841758		377.7	5.854	0.59	45.96	0.91	6.8		0.127	
T-33	12/25/2004 6:34	359	17:36	-67.933	178.1518	33.756	-1.759	5.003	0.001591235		379.7	7.897	0.21	33.75	0.59	7.33		0.234	CTD Sta 6
T-34	12/25/2004 13:18	360	0:18	-68.575	178.1717	33.84	-1.739	3.213	0.001342271		389.5	4.616	0.14	28.08	1.15	5.95		0.164	
T-35	12/25/2004 20:22	360	7:22	-69.283	178.1708	33.893	-1.717	3.892	0.001466559		397.3	2.639	0.061	30.54	0.33	8.415108		0.086	
T-36	12/26/2004 2:30	360	13:32	-70.005	178.1860	33.855	-1.602	5.42	0.002051732		391.3	1.83		45.32	0.00	10.47619		0.040	
T-37	12/26/2004 6:00	360	17:00	-70.526	178.0764	33.921	-1.572	3.61	0.001925615			1.57	0.132	38.93	2.06	11.72266		0.040	CTD Sta 7
T-38	12/26/2004	360	22:12	-71.041	177.4024	33.952	-1.248	2.92	0.001053799		410.9	1.172	0.11	22.15	0.30	9.636957		0.053	
T-39	12/26/2004	361	6:32	-71.899	176.5921	33.927	-1.626	3.951	0.001508075		405.8	1.958	0.14	22.41	1.29	10.73107		0.087	
T-40	12/26/2004	361	10:31	-72.451	176.5547	33.989	-0.88	3.607	0.001300928		418.8	1.77	0.043	22.07	0.33	13.85903		0.080	Leave ice
T-41	12/27/2004	361	17:33	-73.466	177.3175	34.178	0.041	63.2	0.011721187		260.7	15.34	0.501	71.83	5.46	53.61777		0.214	Station 8 CTD
T-42	12/27/2004	361	23:20	-74.411	177.8113	34.273	0.418	6.85	0.007260875		265.5	5.318	0.228	73.94	0.38	37.60214		0.072	
T-43	12/27/2004	362	4:30	-75.305	178.3066	34.214	-0.033	16.792	0.007356914		324.4	4.15	0.62	54.92	4.15	23.67481		0.076	
T-44	12/27/2004	362	8:45	-76.066	178.7419	34.421	-0.14	19.888	0.00764642		245.4			74.38	3.71	47.44008			
T-45	12/27/2004	362	12:16	-76.510	179.1652	34.455	-0.471	29.277	0.008776023		247.8	6.813	0.224	55.68	1.32	39.35918		0.122	

Methods - Transect sampling - NBP-0409.

All transect sample were collected from the ship's underway pumping system in the aft laboratory.

**DMS** - Samples were collected from the ship underway system by attaching a 0.2 um PolyCap Nylon filter capsule to the pump outflow and filling a 60 ml teflon bottle with minimal gas exchange. These filtered samples were analyzed by purge and trap gas chromatography within 1 h of collection.

**DMSP-Total** - Ten ml of unfiltered seawater was collected directly from the pump outflow into 15 ml storage tube containing 50 ul of 50% H2SO4. Two replicate storage tubes per sample. After >12 h to allow DMS to oxidize, a 1.5 ml sub-sample from storage tube was pipetted into 14 ml serum vial and treated with 1 ml of 5 N NaOH. Sample was purged entirely into cryotrap for quantification of DMS by FPD. Corrections were made for Air-NaOH blanks which were low or absent during the cruise.

**NOTE:** Post cruise, we discovered that the acidification procedure may result in loss of DMSP in samples containing colonial *Phaeocystis* sp.. Acidification causes a very rapid loss of DMSP and some conversion into DMS. This was not noticed on the cruise and no corrections could be made. The amount of loss for these samples is not known. Because we found this only when colonial *Phaeocystis* was present and since during NBP-0409 (January 2005) the phytoplankton population was dominated by single celled *Phaeocystis* and diatoms, it is likely not as severe a problem as it was during NBP-0509 (November cruise). We will publish a paper on effects of acidification on DMSP storage soon.

**DMSOd** - Samples were collected from the ship underway system by attaching a 0.2 um PolyCap Nylon filter capsule to the pump outflow and filling a 60 ml teflon bottle. The samples were then frozen for later analysis. After thawing the samples were sparged to remove any pre-existing DMS, and then a sub-sample of 1 ml was treated with 0.3 ml of Acros TIC3 (30%) and the vial immediately capped with a teflon faced septum. After capping with a new teflon faced septum, vials were heated at 50 deg C for 60 minutes. After cooling to room temperature, the samples were analyzed by sparging the entire sample into the cryotrap. Samples were corrected for TIC3 blanks. Q water on the NBP was an inappropriate blank because it had some DMSO in it.

**Fluorescence** - A flow through fluorometer (Turner Designs) was used to collect data.

All other readings are from the ship underway system.