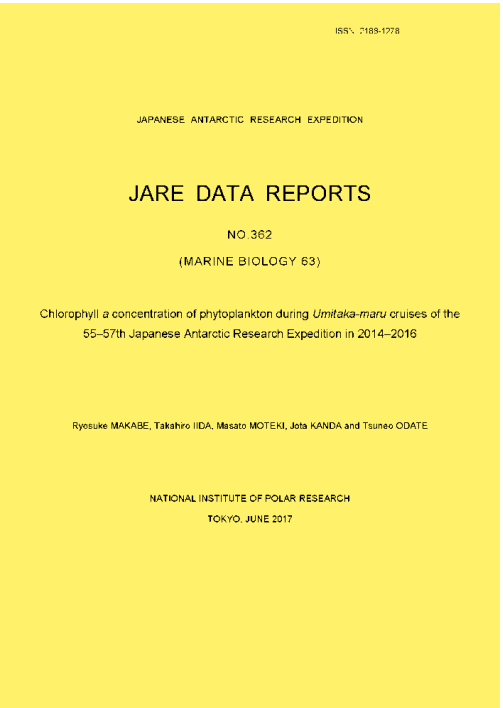
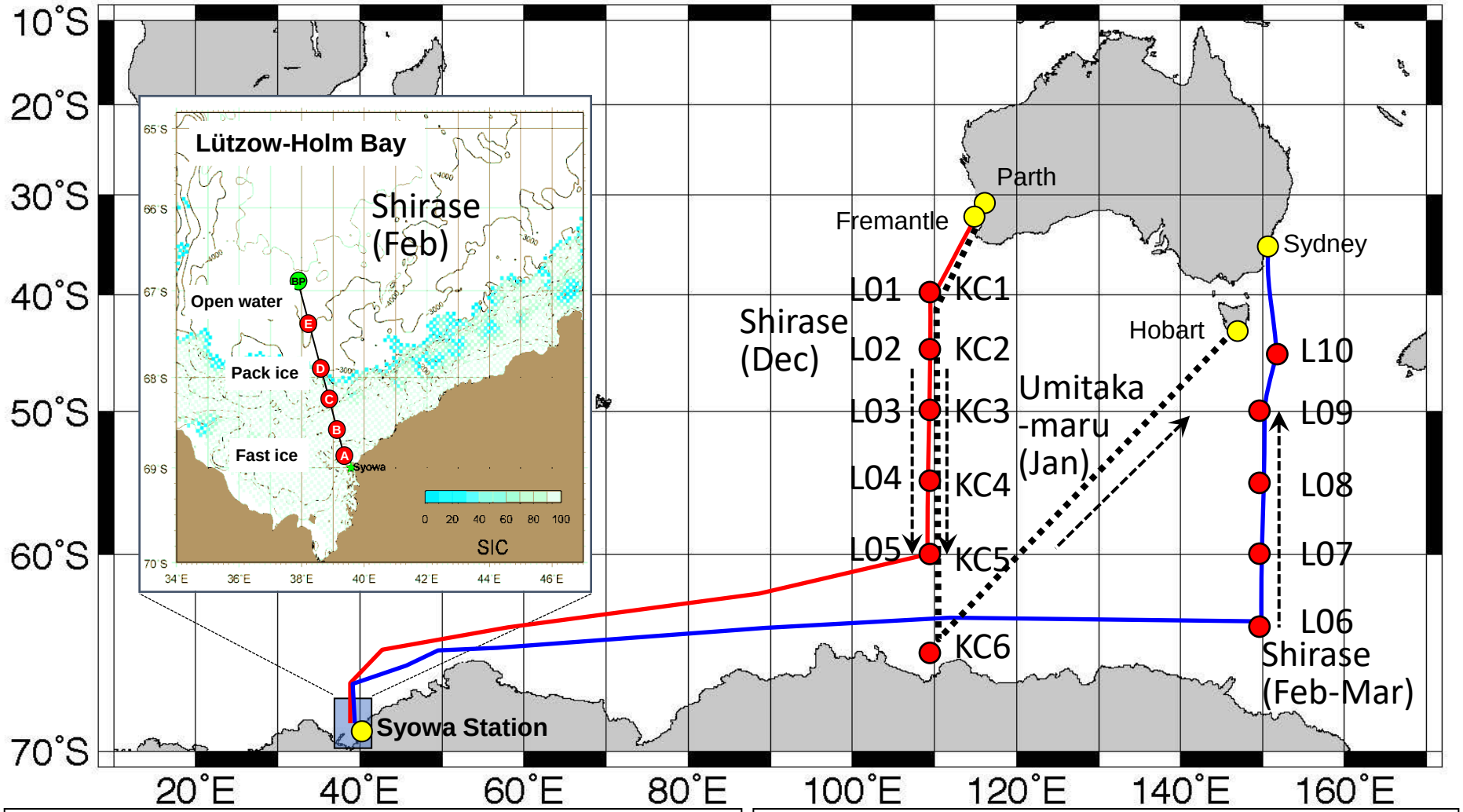
海洋生態系モニタリングデータ公開の現状
―基本観測（海洋物理・化学）との比較―

髙尾信太郎、真壁竜介、高橋邦夫、小達恒夫
（国立極地研究所）



JARE 基本観測（海洋物理・化学） & 海洋生態系モニタリングデータ



Shirase
01: Surface observation along cruise track (red & blue)
02: Station observations at L01 to L10
03: Sea ice zone observations at A to BP
04: Continuous Plankton Recorder (broken allows)

Umitaka-maru
05: Surface observation along cruise track (dotted)
06: Station observations at KC1 to KC6
07: Continuous Plankton Recorder (broken allows)

JARE 基本観測（海洋物理・化学）＆　海洋生態系モニタリングデータの公開状況

Phase	JARE	Year	Zooplankton: Monitoring NORPAC	Zooplankton: Monitoring Closing	Zooplankton: Monitoring CPR	Zooplankton: Others	Biogeochemical properties of seawater: Lützow-Holm Bay (LHB) CTD	LHB Nutrient	LHB Chl *a*	Monitoring transect CTD	Monitoring transect Nutrient	Monitoring transect Chl *a*	Monitoring transect Pigment	Scientific Project
	11	1969/70												Sea ice biota MB3
	12	1970/71												
	13	1971/72												
	14	1972/73	MB1											
	15	1973/74	-											
	16	1974/75	-											
	17	1975/76												
	18	1976/77				MTD net MB2								
	19	1977/78	MB1											
I	20	1978/79				MTD net MB2								
	21	1979/80				MTD net MB2				O1				
	22	1980/81				BIOMASS whale MB4				O2				
	23	1981/82	MB5			BIOMASS MB6, 15, 17, 18, 19				O3				BIOMASS MB6, O5
	24	1982/83				BIOMASS MB20				O4				BIOMASS MB9, 16
II	25	1983/84				BIOMASS MB21				O6			MB7	BIOMASS MB10
	26	1984/85								O7		MB8		
	27	1985/86				Zoop & Benthos MB11				O8		MB13	MB11	Chl *a* in Breid Bay MB12
	28	1986/87								O9		MB14		
	29	1987/88								O10				
III	30	1988/89								O11		MB22		
	31	1989/90	MB28							O12		MB23		Oceanographic data in LHB O15
	32	1990/91								O14		MB24		
	33	1991/92								O16		MB25		
	34	1992/93								O17		MB26		
IV	35	1993/94								O18		MB27		
	36	1994/95								O19		MB29		
	37	1995/96								O20				
	38	1996/97								O21				
	39	1997/98								O23				Oceanographic data in LHB O22
V	40	1998/99	MB32							O24				Under fast ice in LHB MB30
	41	1999/00								O25				
	42	2000/01		MB33						O26		MB31		
	43	2001/02								O27				
	44	2002/03								O28				
VI	45	2003/04								O29		MB34		
	46	2004/05	MB38							O30		MB35		
	47	2005/06		MB39						O31		MB36		
	48	2006/07								O32		MB37		
VII	49	2007/08								in preparation		MB40		
	50	2008/09				Aurora & Umitaka MB55				in preparation				
	51	2009/10								MB41		MB42		
	52	2010/11	MB46	MB45			MB51			MB43		MB50		
	53	2011/12					MB44							
VIII	54	2012/13					MB47							
	55	2013/14	MB49				MB48							
	56	2014/15	MB59				MB53							
	57	2015/16	MB60				MB61							

JARE Data Reports
Marine Biology (MB) V. 1-62
Oceanography (O) V. 1-33

過去の基本観測（海洋物理・化学）＆　海洋生態系モニタリングデータの公開状況

(e.g. JAPF DATA REPORTS, Oceanography 1, 1982)

Table 4. Serial observation data.

Station 1

Date : December 25,1979
Time(GMT) : 0415-0730
(LMT) : 0815-1130
Latitude : 63°54'S
Longitude : 61°59'E

Meteorological observation

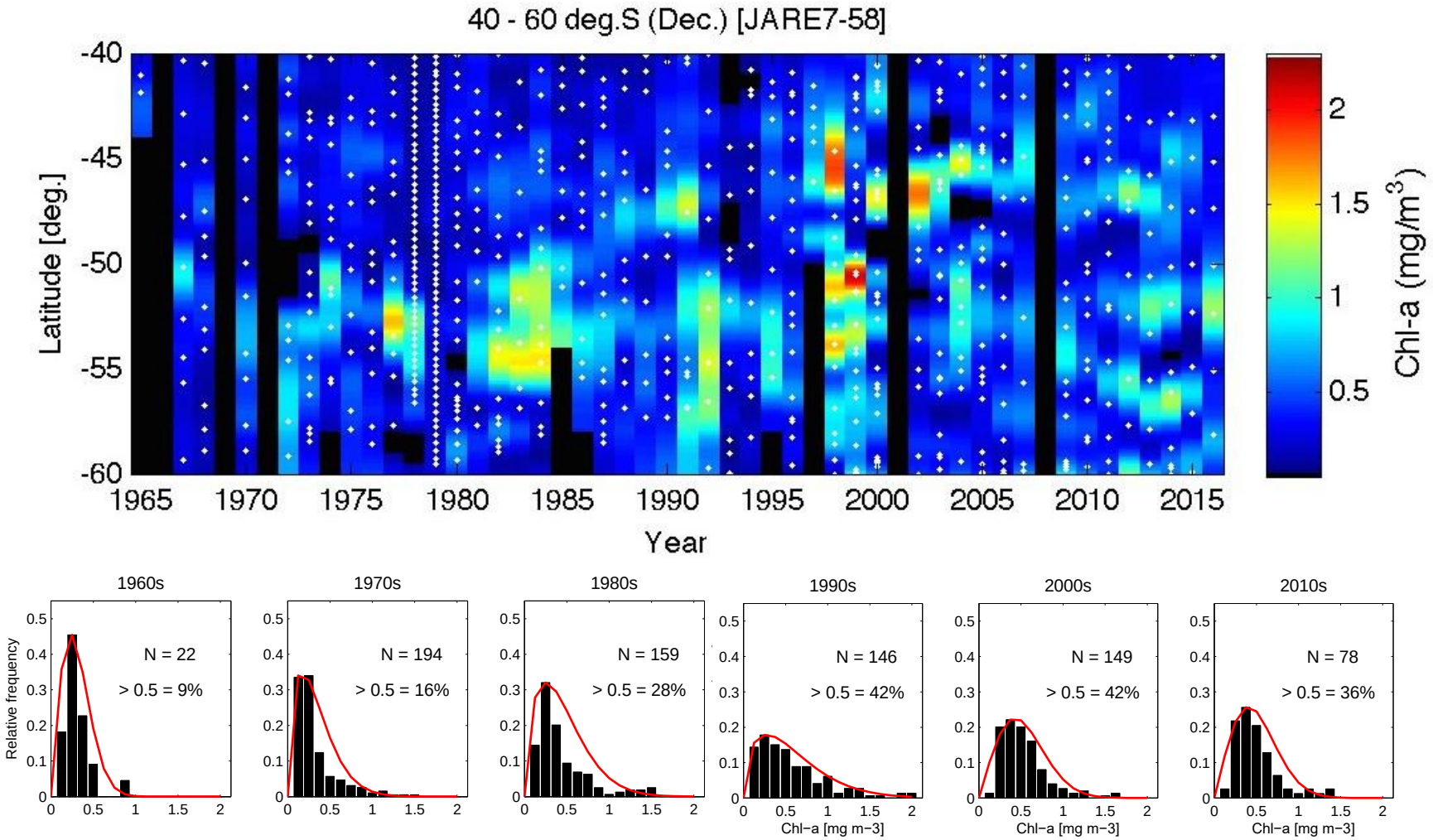
Time(GMT) : 0600
(LMT) : 1000
Weather : Cloudy
Air temperature : 4.1°C
Atmospheric pressure : 972.9mb
Wind direction : E
velocity : 2m/s
Humidity : 59%
Sea : 1
Swell : NW/1

Depth (m)	T(°C)	S(‰)	pH	O_2 (ml/l)	PO_4- P	SiO_3-Si	NO_2- N	NO_3- N	NH_4- N	Depth (m)	T(°C)	S(‰)	σ_t	ΔD
					(μg-atoms/l)									
0	0.3	33.720	8.30	7.82	1.51	48	0.13	30.	0.7	0	0.3	33.720	27.13	0.000
10														009
21														018
31														027
52														042
78	-1.57	34.559	8.21	6.29	2.09	65	0.23	30.	0.8	75	-1.45	34.521	27.04	0.055
103	-0.60	34.453	8.17	5.76	2.16	69	0.19	31.	0.5	100	-0.72	34.440	27.71	0.065
128	0.43	34.555	8.15	4.90	2.17	77	0.17	30.	1.0	125	0.31	34.544	27.74	0.075
154	1.01	34.620	8.11	4.55	2.32	82	0.05	30.	1.0	150	0.94	34.612	27.76	0.084
205	1.63	34.685	8.09	4.23	2.27	87	0.10	31.	0.6	200	1.60	34.682	27.77	0.101
257	1.37	34.677	8.10	4.46	2.24	86	0.10	31.	1.0	250	1.42	34.670	27.78	0.118
308	1.56	34.706	8										27.79	0.135
411	1.47	34.714	8										27.80	0.167
514	1.45	34.728	8										27.82	0.199
616	1.33	34.732	8										27.83	0.230
719	1.20	34.732	8.11	4.48	2.12	98	0.26	30.	0.8	700	1.22	34.732	27.84	0.259
821	1.12	34.725	8.12	4.44	2.11	99	0.22	31.	0.8	800	1.14	34.727	27.84	0.289
1027	0.91	34.712	8.15	4.58	2.09	104	0.16	31.	0.6	1000	0.94	34.713	27.84	0.347
1232	0.80	34.708	8.15	4.58	2.22	109	0.02	31.	0.7	1200	0.81	34.708	27.84	0.405
1539	0.63		8.12	4.48	2.19	108	0.07	32.	0.8	1500	0.65	34.705	27.85	0.490
2049	0.28	34.698	8.10	4.68	2.25	121	0.05	33.	0.7	2000	0.31	34.699	27.85	0.622
2559	0.16	34.683	8.10	4.80	2.22	125	0.03	33.	1.2	2500	0.17	34.685	27.86	0.748
3067	-0.02	34.677	8.11	5.01	2.24	125	0.11	33.	0.9	3000	0.00	34.678	27.87	0.868
3575	-0.17	34.669	8.11	5.22	2.11	121	0.20	33.	0.8	3500	-0.14	34.670	27.87	0.980
4083	-0.46	34.661	8.10	5.76	2.14	100	0.10	32.	1.0	4000	-0.40	34.662	27.87	1.079

紙媒体に記載されたデータのみ

ユーザーが利用し辛い

海表面Chl*a*の時系列変化 (12月の110°E line)



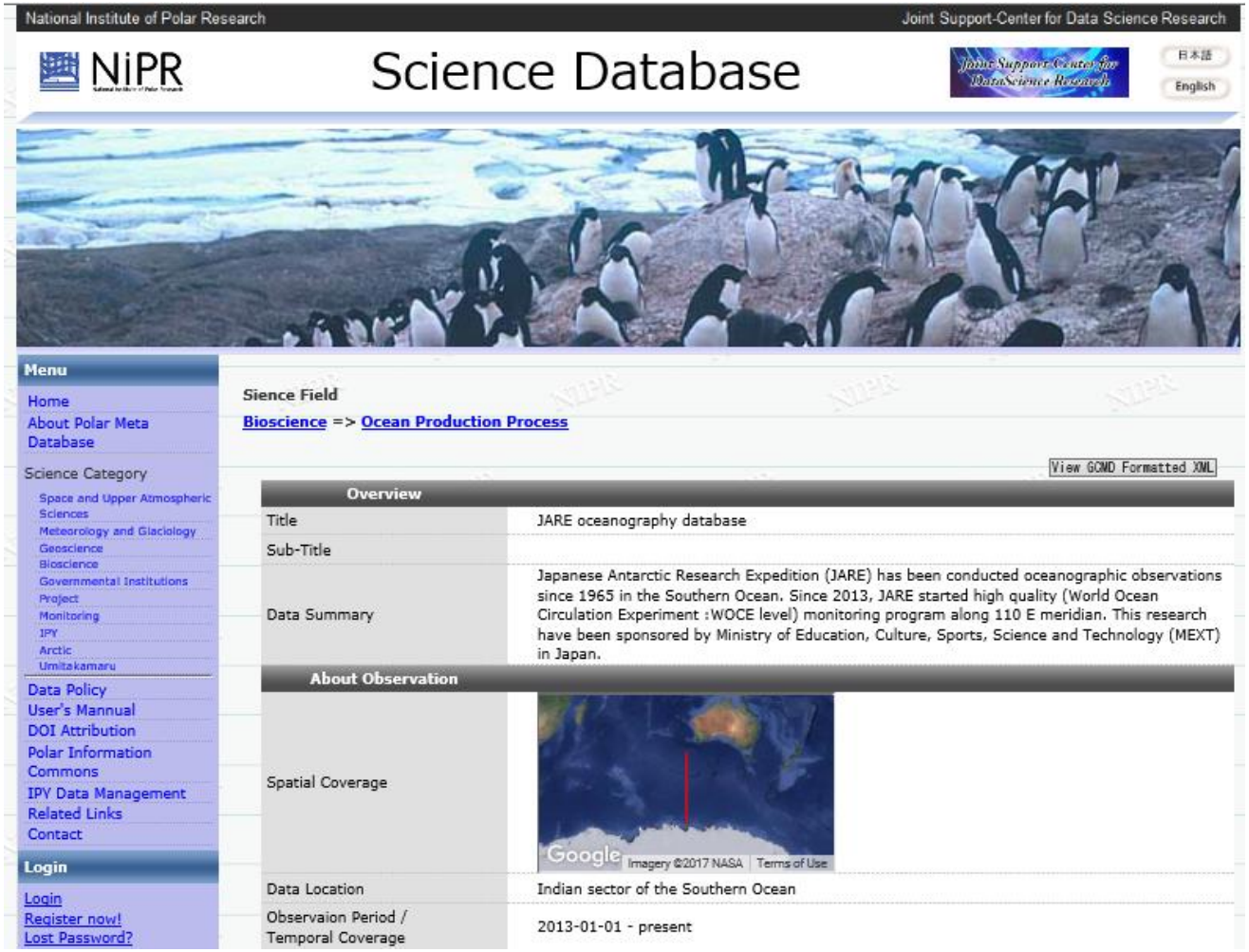
12月の110°E Lineのモニタリング観測において、0.5 mg m^{-3}以上の海表面Chl*a*の出現頻度は増加傾向

Takao et al. (In preparation)

現在の基本観測（海洋物理・化学）データの公開状況

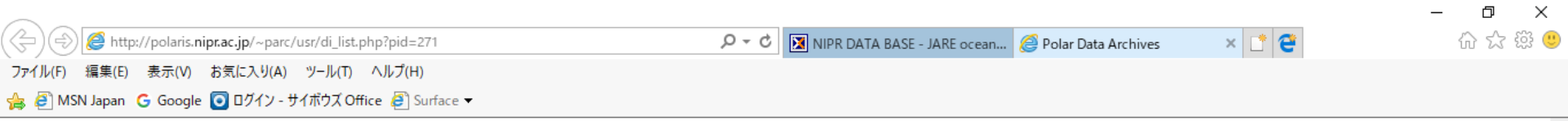
インターネットを介したデータ公開（契約仕様）

Data is available at http://scidbase.nipr.ac.jp/modules/metadata/index.php?content_id=271



現在の基本観測（海洋物理・化学）データの公開状況

Data is available at http://scidbase.nipr.ac.jp/modules/metadata/index.php?content_id=271



Polar Science Data Archives

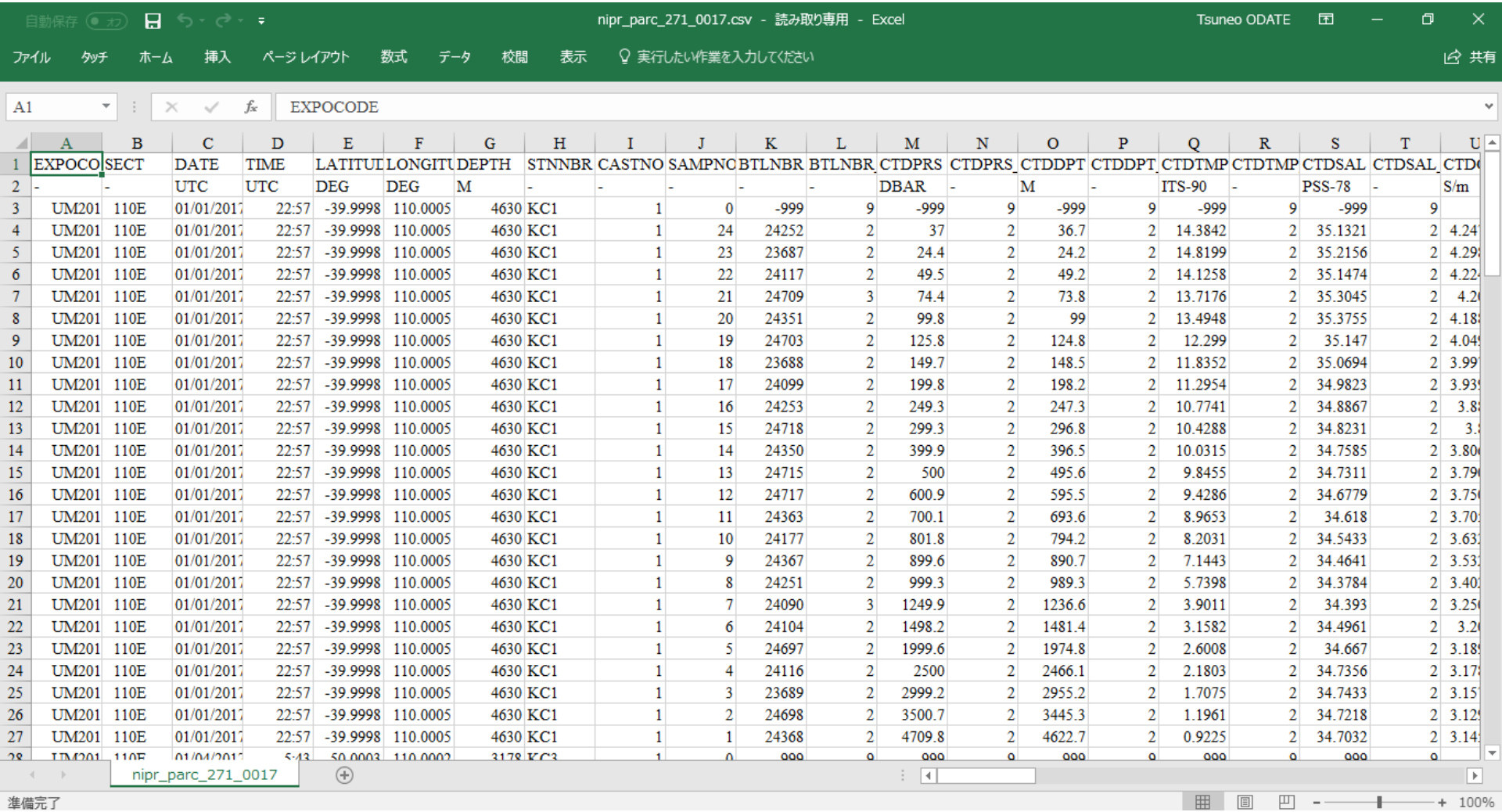
2017/12/04

Return to Project List

DID	Vol	Filename	Description	File size	Date of Entry	Download
302	1	nipr_parc_271_0001.csv	JARE54_bottle.csv	70899	2016-03-23	download
303	2	nipr_parc_271_0002.csv	JARE54_surface.csv	4786522	2016-03-23	download
304	3	nipr_parc_271_0003.csv	JARE55_bottle.csv	37621	2016-03-23	download
305	4	nipr_parc_271_0004.csv	JARE55_surface.csv	4710514	2016-03-23	download
306	5	nipr_parc_271_0005.csv	JARE56_bottle.csv	86656	2016-03-23	download
307	6	nipr_parc_271_0006.csv	JARE56_surface.csv	4380429	2016-03-23	download
308	7	nipr_parc_271_0007.csv	JARE57_bottle.csv	80297	2016-03-23	download
309	8	nipr_parc_271_0008.csv	JARE57_surface.csv	4104746	2016-03-23	download
311	10	nipr_parc_271_0010.zip	JARE54_Data document.zip	662665	2016-03-28	download
312	11	nipr_parc_271_0011.zip	JARE55_CTD.zip	632042	2016-03-28	download
313	12	nipr_parc_271_0012.zip	JARE55_Data document.zip	660688	2016-03-28	download
314	13	nipr_parc_271_0013.zip	JARE56_CTD.zip	983031	2016-03-28	download
315	14	nipr_parc_271_0014.zip	JARE56_Data document.zip	1042760	2016-03-28	download
316	15	nipr_parc_271_0015.zip	JARE57_CTD.zip	1201344	2016-03-28	download
318	16	nipr_parc_271_0016.zip	JARE57_Data document.zip	789025	2016-03-28	download
346	9	nipr_parc_271_0009.zip	JARE54_CTD.zip	385819	2016-06-27	download
408	29	nipr_parc_271_0017.csv	JARE58_bottle.csv	83748	2017-03-27	download
409	29	nipr_parc_271_0018.zip	JARE58_CTD.zip	1028214	2017-03-27	download
410	29	nipr_parc_271_0019.zip	JARE58_Data document.zip	2346509	2017-03-27	download

現在の基本観測（海洋物理・化学）データの公開状況

Data is available at http://scidbase.nipr.ac.jp/modules/metadata/index.php?content_id=271



	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T	U
1	EXPOCO	SECT	DATE	TIME	LATITUI	LONGITU	DEPTH	STNNBR	CASTNO	SAMPNO	BTLNBR	BTLNBR_	CTDPRS	CTDPRS_	CTDDPT	CTDDPT_	CTDTMP	CTDTMP	CTDSAL	CTDSAL_	CTD(
2	-	-	UTC	UTC	DEG	DEG	M	-	-	-	-	-	DBAR	-	M	-	ITS-90	-	PSS-78	-	S/m
3	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	0	-999	9	-999	9	-999	9	-999	9	-999	9	
4	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	24	24252	2	37	2	36.7	2	14.3842	2	35.1321	2	4.24
5	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	23	23687	2	24.4	2	24.2	2	14.8199	2	35.2156	2	4.29
6	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	22	24117	2	49.5	2	49.2	2	14.1258	2	35.1474	2	4.22
7	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	21	24709	3	74.4	2	73.8	2	13.7176	2	35.3045	2	4.2
8	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	20	24351	2	99.8	2	99	2	13.4948	2	35.3755	2	4.18
9	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	19	24703	2	125.8	2	124.8	2	12.299	2	35.147	2	4.04
10	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	18	23688	2	149.7	2	148.5	2	11.8352	2	35.0694	2	3.99
11	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	17	24099	2	199.8	2	198.2	2	11.2954	2	34.9823	2	3.93
12	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	16	24253	2	249.3	2	247.3	2	10.7741	2	34.8867	2	3.8
13	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	15	24718	2	299.3	2	296.8	2	10.4288	2	34.8231	2	3.
14	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	14	24350	2	399.9	2	396.5	2	10.0315	2	34.7585	2	3.80
15	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	13	24715	2	500	2	495.6	2	9.8455	2	34.7311	2	3.79
16	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	12	24717	2	600.9	2	595.5	2	9.4286	2	34.6779	2	3.75
17	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	11	24363	2	700.1	2	693.6	2	8.9653	2	34.618	2	3.70
18	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	10	24177	2	801.8	2	794.2	2	8.2031	2	34.5433	2	3.63
19	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	9	24367	2	899.6	2	890.7	2	7.1443	2	34.4641	2	3.53
20	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	8	24251	2	999.3	2	989.3	2	5.7398	2	34.3784	2	3.40
21	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	7	24090	3	1249.9	2	1236.6	2	3.9011	2	34.393	2	3.25
22	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	6	24104	2	1498.2	2	1481.4	2	3.1582	2	34.4961	2	3.2
23	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	5	24697	2	1999.6	2	1974.8	2	2.6008	2	34.667	2	3.18
24	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	4	24116	2	2500	2	2466.1	2	2.1803	2	34.7356	2	3.17
25	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	3	23689	2	2999.2	2	2955.2	2	1.7075	2	34.7433	2	3.15
26	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	2	24698	2	3500.7	2	3445.3	2	1.1961	2	34.7218	2	3.12
27	UM201	110E	01/01/2017	22:57	-39.9998	110.0005	4630	KC1	1	1	24368	2	4709.8	2	4622.7	2	0.9225	2	34.7032	2	3.14
28	UM201	110E	01/04/2017	5:43	50.0003	110.0002	3178	KC3	1	0	999	9	999	9	999	9	999	9	999	9	

海洋生態系モニタリングデータの公開状況

JARE DATA REPORTS
(Marine Biology), 61

Biogeochemical properties of seawater measured from the icebreaker Shirase during the 57th Japanese Antarctic Research Expedition in the austral summer, 2015–2016

Contents

Station
Date
Time
Latitude
Longitude
Temperature
Salinity
Nitrate
Nitrite
Phosphate
Silicate
Chlorophyll *a*

赤字はサンプルの測定値

analysis data, along with CTD data at defined depths, are listed in Table 2. Underway water sampling analysis data and sampling information are shown in Table 3.

データ保存先へリンク

(http://polaris.nipr.ac.jp/JARE/). Permission to use these data for publication or presentation should be obtained in writing. Inquiries about details of the data record should be addressed to:

Tsuneo Odate

National Institute of Polar Research

Tel: +81-42-512-0738

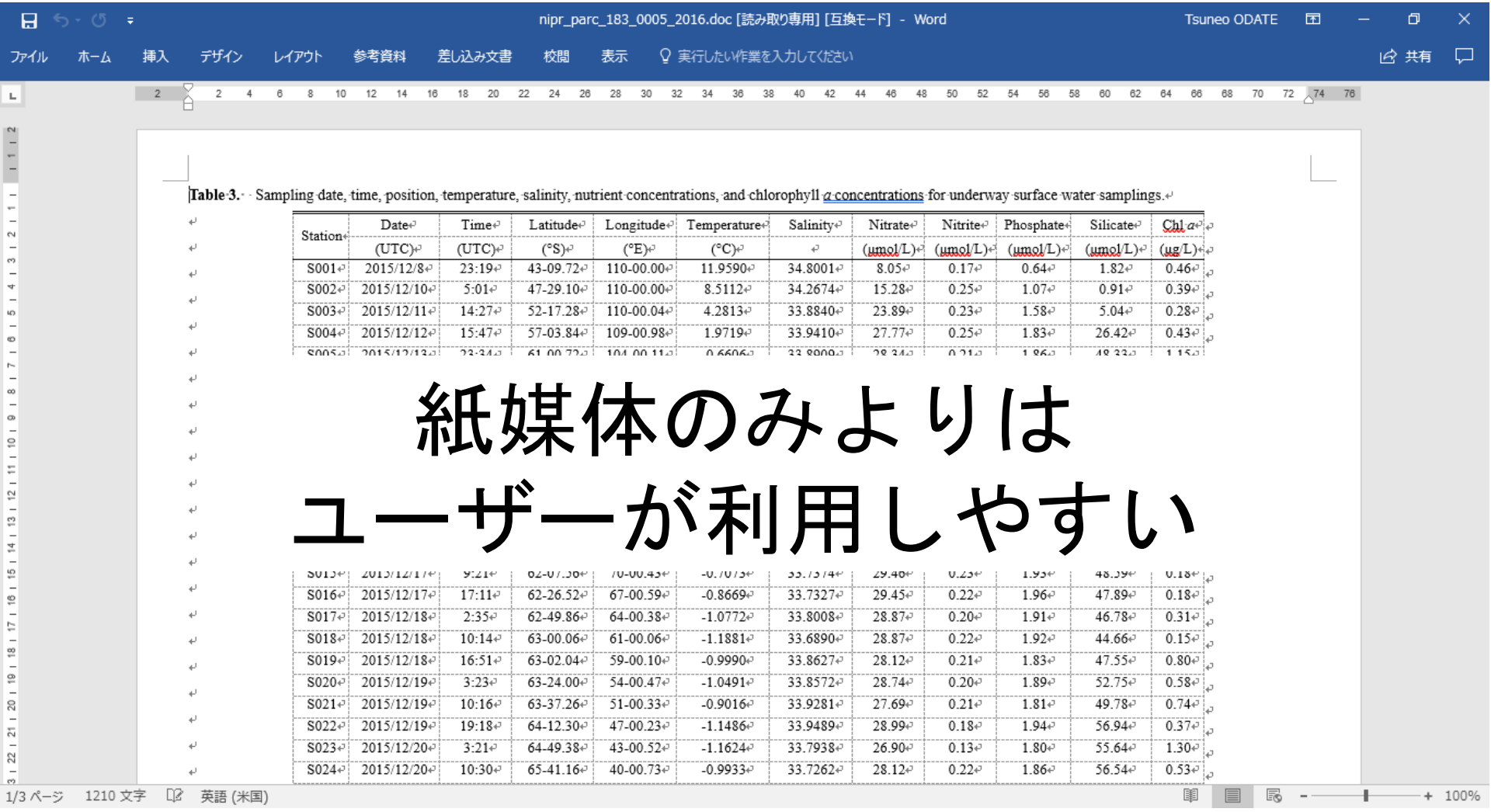
E-mail: odate@nipr.ac.jp

Acknowledgments

We express our heartfelt appreciation to all members of JARE-57 for their support. We also thank the officers and crew of the icebreaker *Shirase*.

海洋生態系モニタリングデータの公開状況

Table 3 in JARE DATA REPORTS (Marine Biology), 61
Biogeochemical properties of seawater measured from the icebreaker Shirase during the 57th Japanese Antarctic Research Expedition in the austral summer, 2015–2016



紙媒体のみよりは
ユーザーが利用しやすい

海洋生態系モニタリングデータの公開状況

それだけではユーザーが研究に使用できない情報（サンプル一覧）だけが公開されている場合もある

JARE DATA REPORTS
(Marine Biology), 62

Plankton sampling by the training vessel Umitaka-maru in the Indian sector of the Southern Ocean in the austral summer of 2016

Contents
- Station No.
- Position
- Date & Time (UTC)
- Maximum depth reached (m)
- Flow-meter revolutions
- Volume filtered (m^3)
- Sample No.

3.2 NORPAC net

Micro- to meso-zooplankton were collected using a twin NORPAC standard net with one net made of nylon bolting cloth with a 335-µm mesh and the other with 100-µm mesh (Motoda, 1957). The diameter of the net mouth rings was 45 cm. The net was hauled vertically at a speed of about 1 m s^{-1} from an approximate depth of 150 m. The maximum depth reached was estimated from the wire angle and length of wire paid out. The volume of water filtered through each net was estimated using a calibrated flow-meter (#5571-B; Rigo Co., Ltd., Tokyo, Japan) mounted at the center of the mouth ring of each net.

NORPAC net samplings were conducted at seven stations along the 110°E transect (Fig. 2). Detailed sampling information is given in Table 2.

今後の海洋生態系モニタリングデータの公開

JARE DATA REPORTS
(Marine Biology), 62

Plankton sampling by the training vessel Umitaka-maru in the Indian sector of the Southern Ocean in the austral summer of 2016

サンプル一覧

JARE DATA REPORTS
(Marine Biology), 60

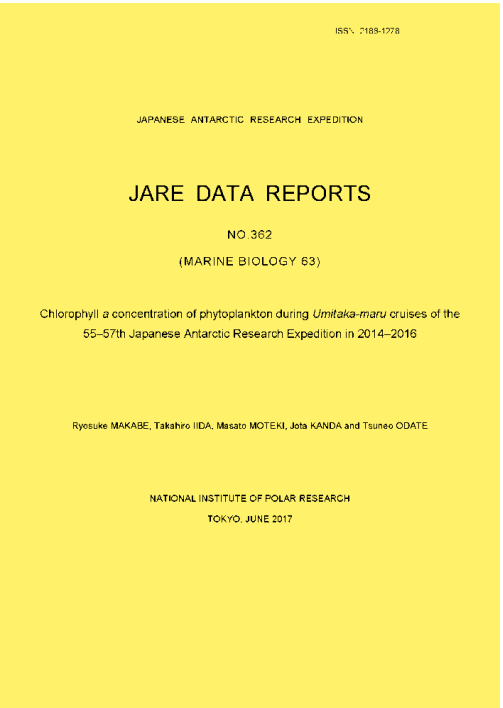
Zooplankton sampling during the 57th Japanese Antarctic Research Expedition in austral summer 2015–2016

**サンプル一覧＋
限定的な数値データ**

JARE DATA REPORTS
(Marine Biology), 61

Biogeochemical properties of seawater measured from the icebreaker Shirase during the 57th Japanese Antarctic Research Expedition in the austral summer, 2015–2016

**研究に利用できる
数値データ**



**ユーザーが利用しやすい
枠組みの創生**

今後の海洋生態系モニタリングデータの公開

【PDJ投稿済み】

TAKAHASHI, KT., MAKABE, R., S. TAKAO, and T. ODATE

【今年度中にPDJ投稿】

Chlorophyll *a* and macro-nutrients concentration during *Umitaka-maru* cruises of the 58th Japanese Antarctic Research Expedition in January 2017

MAKABE, R., S. TAKAO, and T. ODATE