

極域データの国際連携 - PEDSC関連の動向 -



- ✓ データ共有 (データベース)
- ✓ データ出版・データジャーナル
- ✓ 国際シンポジウム主催

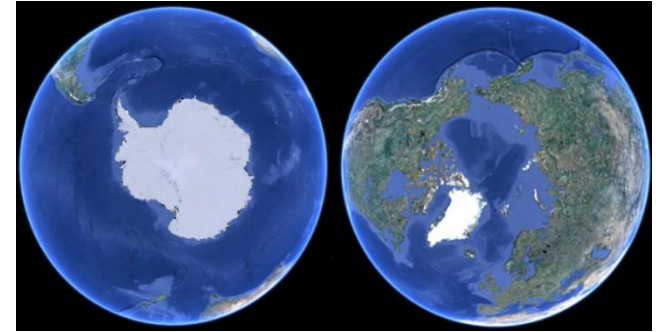


金尾 政紀

極域環境データサイエンスセンター



Polar Environmental Data Science Center (PEDSC) DS/NIPR-ROIS



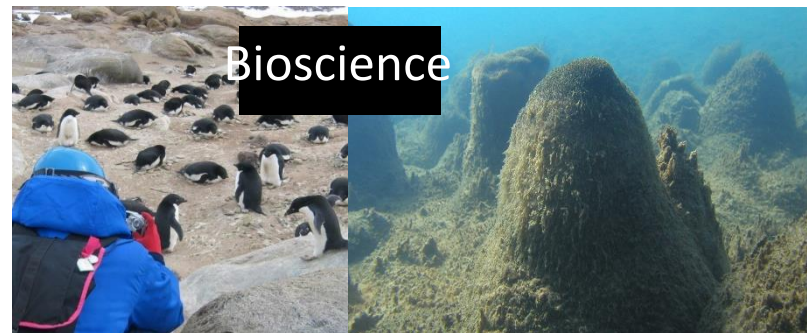
Collaboration
Open Data

Data Science

Network Database



Geoscience



Bioscience

Polar Environment Data Science Center / DS / ROIS

NIPR

DS/ROIS

External
Community

Polar Environment Data Science Center

Observation and Research activity
in Arctic and Antarctic regions

Digital data

- Space and Upper Atmospheric Sciences Group
PANSY, EISCAT, aurora, magne, ULF, VLF, CNA
- Meteorology and Glaciology Group
CO₂, CH₄, aerosole, meteorological satellite
- Geoscience Group: seismology, gravity, VLBI
- Bioscience Group: marine biology, genome data

Sample data

- Ice core
- Meteorite
- Rock
- Greenhouse effect gas
- Biodiversity

Data Base System

- Science Data Base
- ADS (Arctic Data archive System)
- IUGONET (Inter-university Upper atmosphere Global Observation NETwork)
- Antarctic GIS system

Collaboration with national and international communities

Data Science, Collaborative research

Data Publication (Polar Data Journal)

Integrated
Database

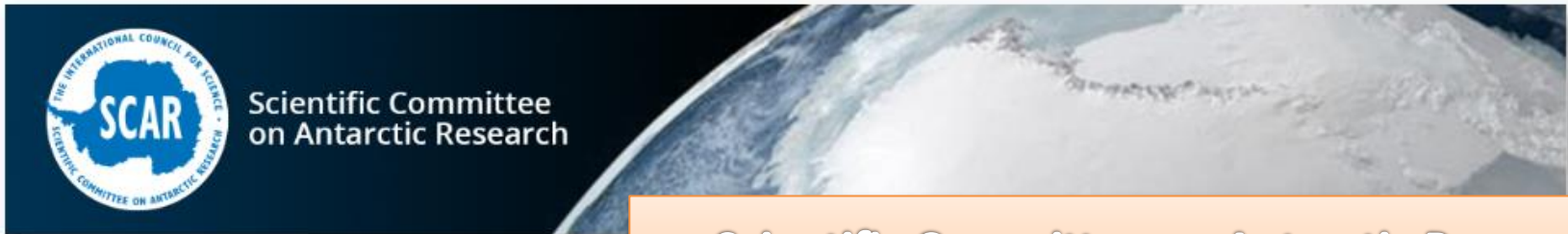
- University, College
- Research Institution
- Company
- Public

- ArCS
- GRENE
- JCAR
- IASC
- SIOS

- SCAR/ICSU
- WDS/ICSU
- CODATA/ICSU
- GCMD/NASA

SCADM (南極データマネジメント委員会)

- Standing Committee on Antarctic Data Management -



Scientific Committee on Antarctic Research
(SCAR / ICSU->ISC)

HOME ABOUT US SCIENCE POLICY PRODUCTS

PRODUCTS MENU

STANDING COMMITTEE ON ANTARCTIC DATA
MANAGEMENT (SCADM)

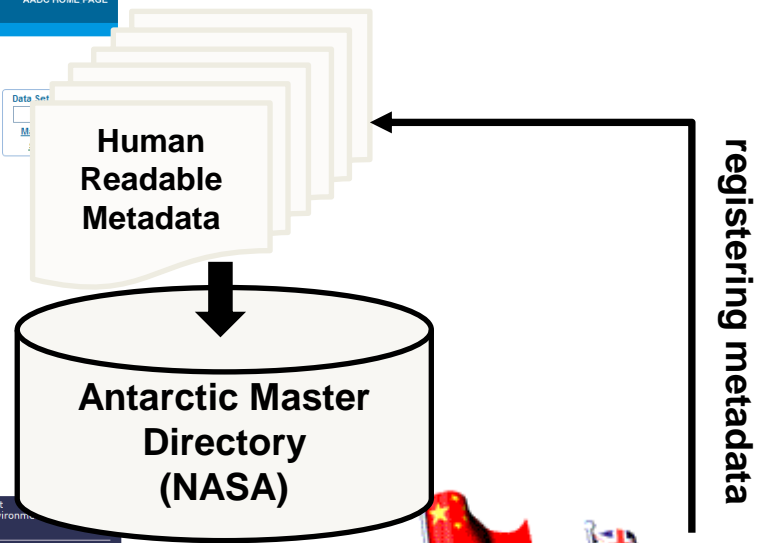


年1回の会合 (SCAR総会 + 各国主催)
最近は、月1回のネット会合 (SCRUM)



南極科学委員会 (SCAR) に関する データのインフラストラクチャー

Antarctic Master Directory (AMD) / GCMD / NASA
南極マスターディレクトリー



A user can search a metadata catalogue. Data might be linked ??



Antarctic Data Management System (ADMS)
= AMD + NADCs

National Antarctic Data Centers (NADC)
各国のデータセンター



研究者向け

総合的データベース



極地研学術データベース



北極域データアーカイブ



南極マスターディレクトリ
- Japan



極地研学術情報リポジトリ

宙空圏



超高層大気メタデータベース (HUCONET)



オーロラデータセンター



北極域・南極点・マクマード基地気象観測データ



EISCATデータベース

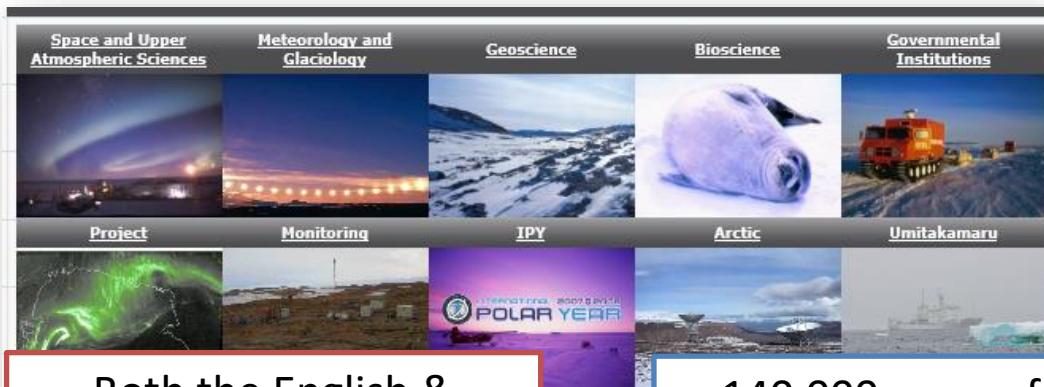


南極昭和基地大型大気レーダー (RAMP) データ



極域の学術(メタ)データベース

- ◆ 南極観測事業(JARE)をはじめ、(北極を含む)両極域での調査・研究活動により取得された科学的データのメタ情報を収集・公開
 - IGY(1957-58)以後の長期間に渡るモニタリング観測
 - 短期間に集中的に行うプロジェクト研究
 - 極地研(研究分野別) + 定常官庁
- ◆ 文字情報・数値形式の所在情報(メタデータ)として、**活して集積**
- ◆ 専用のポータルサーバ <http://scidbase.nipr.ac.jp/>
- ◆ NASAの南極マスターディレクトリー(**Antarctic Master Directory**)等とも連携



Both the English & Japanese pages

140,000 access from 2011. December

Flow Chart of Data Publication on Polar Science

データ共有(相互利用)の促進

Science Metadata Base (English & Japanese)

<http://scidbase.nipr.ac.jp/>

National Institute of Polar Research
Science Database

Welcome admin

日本語 English

Menu

Home
About NIPR-OSASC
Science Category
space and upper atmosphere
Sciences
Biology and Ecology
Geoscience
Ice science
Governmental Institute
Data Policy
Contact
Links
Photo Gallery

Edit Menu

Site Edit
Add New Meta Data
Photo Gallery Edit
News Post

User Menu

View Account
Edit Account
Logout
Administration Menu

Search

Search

Options

meta data list

Date	Title	Author
2011/3/7 12:06	EISCAT radar	
2011/3/4 16:36	Teleseismic digital waveform records	
2011/3/4 14:11	Teleseismic digital waveform records	
2011/3/4 7:51	All-sky Imager Observation at South Pole Station	
2011/3/4 7:46	Monitoring of marine pollution	
2011/3/4 7:45	Antarctic region topographical map	
2011/3/4 7:43	Fluorescence survey of exposed rock area	
2011/3/4 7:41	Ultraviolet limits solar radiation observation classified by wave length	
2011/3/4 7:40	Whale sighting efficiency of the crew on board ocean research vessels in BIOMASS/FIREX	
2011/3/4 7:35	Quaternary fossil information near the Syowa Station	

related databases

NIPR
world data center for Aurora
EISCAT Japan
THE PENGUIN BOOK
ANTARCTIC METEORITE DATABASE
Antarctic Meteorite Database
NIPR
POLAR VIEW

PIC

Hot News !

- Cherry Blossoms in Mead (2011-03-04 11:52:40)
- The plain tree in Mead (2011-03-04 11:52:12)
- (2011-03-04 11:52:47)

NIPR_MetaDB; N=390



Antarctic Master Directory / GCMD



Japanese Antarctic Portal (AMD_JP)



AMD_JP+Arctic_JP; N=300



Japanese Arctic Portal (Arctic_JP)



IPY Portal in GCMD

IPY_JP; N=250

International Data Management Organization / Committee

Exchange of Data & Information

Science Database in Polar Data Center / NIPR

Exchange of Data & Information

NASA / GCMD / Antarctic Master Directory

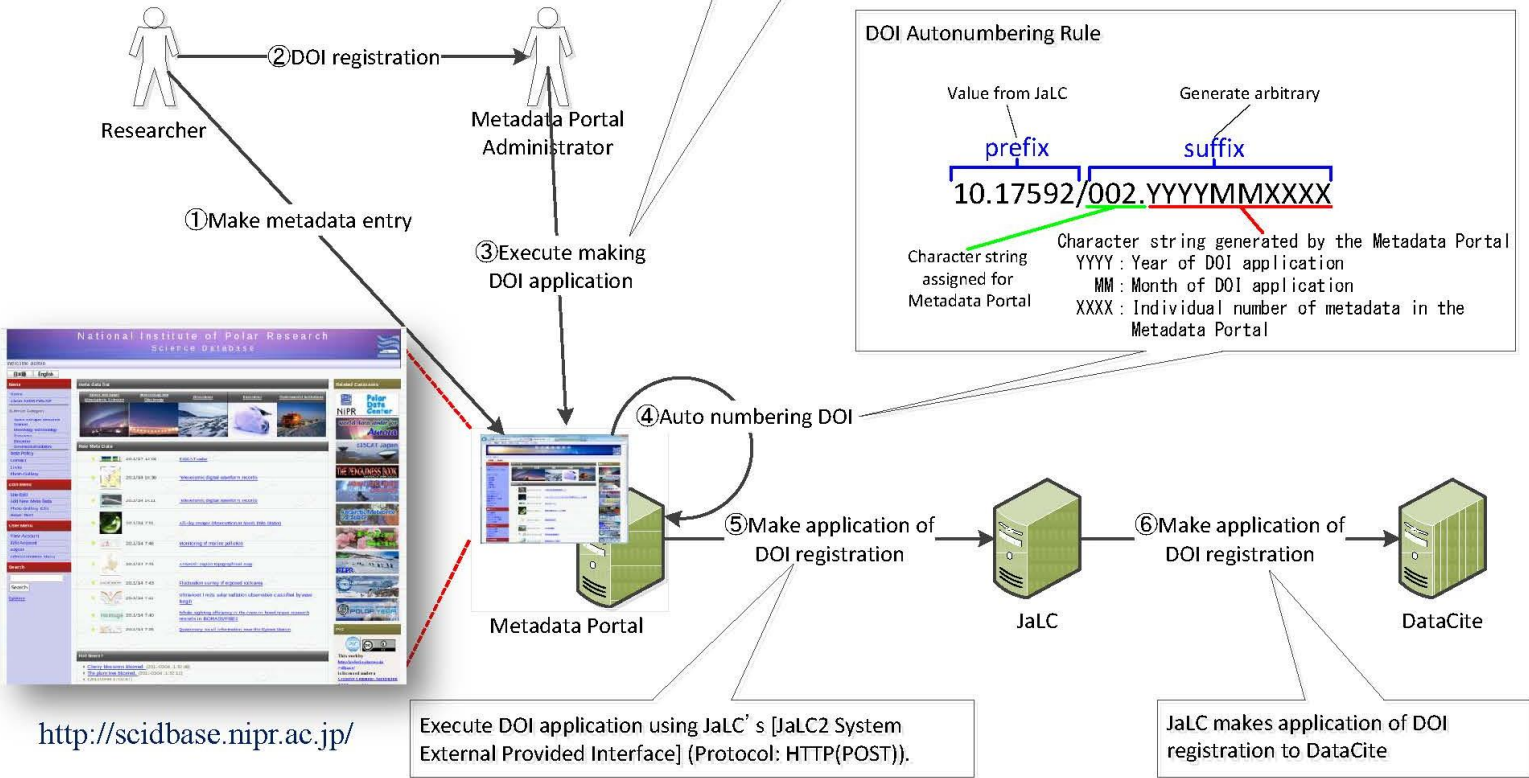
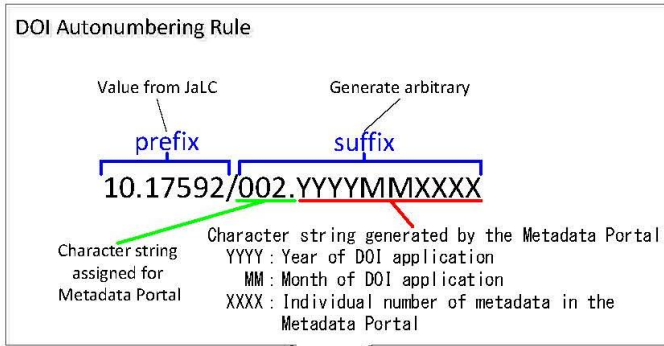
Data Publication

(DOI assignment to the data inside PEDSC metadata portal)

データ出版 (DOI付与) の促進
申請 → NIPR データマネジメント
委員会でチェック → 承認

Provide DOI from DataCite via
Japan Link Center (JaLC)

Only administrator of the Metadata
Portal can execute application to
DOI registration.

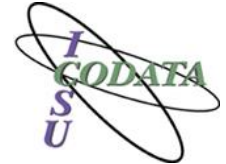


A flow chart to get DOI prefix from DataCite to PEDSC server
(<http://scidbase.nipr.ac.jp/>) via JaLC gateway interface.

Kanao, M., M. Okada, J. Friddell and A. Kadokura,
Data Science Journal, 17: 1, pp.1-6, 2018

International Symposium: Fifty Years after IGY

- Modern Information Technologies and Earth and Solar Sciences -



November 10 – 13, 2008

IGY+50周年事業として、2007-2008に
4つの国際プログラムが実施

National Institute of Advanced Industrial Science and Technology (AIST), Tsukuba, Japan

IGY+50 Symposium Organizing Committee

Masaru Kono (Chair)
Eikichi Tsukuda (IYPE; 国際惑星地球年)
Natsuo Sato (IPY; 国際極年)
Kiyohumi Yumoto (IHYP; 国際太陽系観測年)
Shuichi Iwata (CODATA; 科学技術データ委員会)
Takashi Watanabe (WDC; 世界データセンター)
Toshihiko Iyemori (eGY; 国際デジタル地球年)



The committee member is consist of chairpersons of national representatives for the international programs, under the Science Council of Japan.

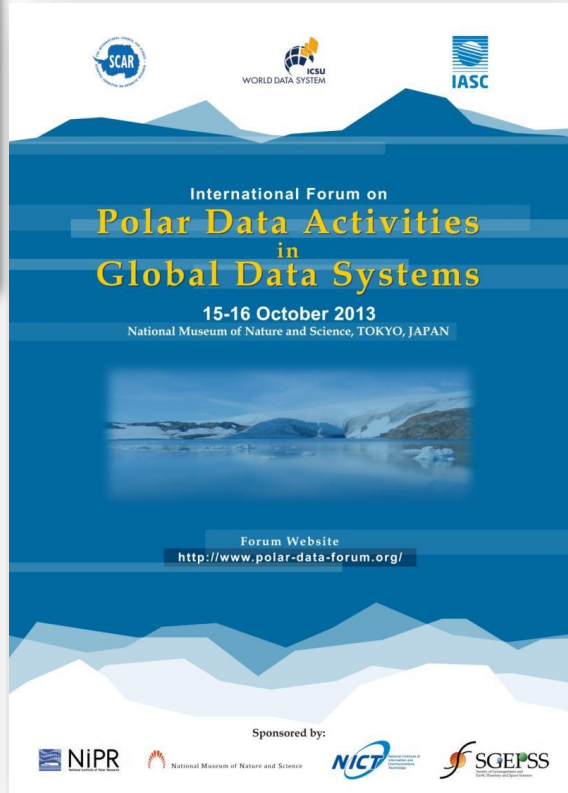
Kanao, M., A. Kadokura, M. Okada, T. Yamnouchi, K. Shiraishi, N. Sato and M. A. Parsons, *The State of IPY Data Management: The Japanese Contribution and Legacy*. Data Science Journal, 12 (2013), pp.WDS124-WDS128, 2013

15 -16 October 2013



極域データ関連の国際シンポジウム開催
参加者 海外40名・国内50名、DSJ 特集号;計16編

*International Forum on 'Polar Data Activities
in Global Data Systems'*



Polar Data Forum I → II, III

極域データフォーラム(2013年@東京)の盛況により、
第2回(2015年@カナダ)、第3回(2019年@フィンランド)が開催
2021年9月に第4回@ノルウェーが予定

Polar Data Forum II

Polar Data Forum II, October 2015, Waterloo, Canada



Polar Data Forum I

Polar Data Forum I, October 2013, Tokyo, Japan

PDF | site



研究集会開催

(分類№: C)1. 国際研究集会(開催) 2. 国際研究集会(参加・コンビーナ) 3. 国内研究集会(開催) 4. 国内研究集会(参加・コンビーナ)

2019年度

(C2) [Third Polar Data Forum](#), Helsinki, Finland, 18-22 Nov., 2019, 参加者: 110名、20か国(日本3、中国、ニュージーランド、欧州、米国、カナダ、南ア)

(C3) 【IUGONET】[「太陽地球系物理学分野のデータ解析手法、ツールの理解と応用」](#)(合同研究集会)、京都大学、宇治キヤンパス、2019年9月12日~13日、参加者: 25名(12日)、30名(13日)

(C2) [World Data System Asia-Oceania Conference 2019](#), Beijing, China, 7-8 May, 2019

(C3) 「極域のオープンデータ・オープンサイエンスに関する研究集会-II」、DS棟、2019年8月27日、参加者: 38名、[プログラム](#)、[講演集](#)



<http://pedsc.rois.ac.jp/>



日本語 | English

> センターについて > 活動 > 関連データ > 統合データベース > 成果 > 共同研究

[プログラム](#)、[講演集](#)

2018年度

(C1) [International Workshop on Data Science - Present & Future of Open Data & Open Science - \(オープンデータ・オープンサイエンスの現状と未来\)](#), 三島市民文化会館, 2018年11月12日~15日, 参加者120人(日本:110, 外国: 10)

(C2) Asian Forum for Polar Sciences, Annual General Meeting 2018, Data management Session III, Xiamen, China, 11-12 October, 2018

(C3) 【IUGONET】[第5回「太陽地球環境データ解析に基づく超高層大気の空間・時間変動の解明」](#), 情報通信研究機構, 2018年9月14日, 参加者118人

(C3) 極域のオープンデータ・オープンサイエンスに関する研究集会、国立極地研究所・DS棟, 2018年10月5日、参加者: 32名、[プログラム](#)、[講演集](#)

(C4) JpGU-学際セッション「海洋地球インフォマティクス (Marine Earth Informatics) ; MAG32」, 幕張メッセ国際会議場, 5月20日-5月24日, 2018

2017年度

(C1) [International Workshop on Sharing, Citation and Publication of Scientific Data across Disciplines \(分野を超えた科学データの共有・引用・出版に関する国際ワークショップ\)](#), 極地研・国語研・DS棟, 2017年12月5日~7日, 参加者73人(日本:65, 外国: 8)

(C2) [Fifth International Symposium on Arctic Research \(ISAR-5\)](#), データセッション "Understanding the Changing Arctic through Data: Stewardship, Publication, and Science; S9", 一橋講堂, 2018年1月16日

(C2) [第8回極域科学シンポジウム, セッション「極域データサイエンス \(Polar Data Science: ID\)」](#), 極地研, 2017年12月8日



Polar Data Journal によるデータ出版 <https://pdr.repo.nii.ac.jp/>

Call For Paper

We are pleased to announce that the new data journal "Polar Data Journal" is now open for submissions. Polar Data Journal is a free-access, peer-reviewed and online journal. It is dedicated for publishing original research data/dataset, furthering the reuse of high-quality data and the benefit to polar sciences.

"Polar Data Journal" aims to cover broad range of research disciplines involving Arctic, Antarctic, or other polar regions, especially earth and life sciences. The Journal primarily publishes data papers, provides detailed descriptions of research data/dataset (e.g. Methods, Data Records, Technical validation). The Journal does not require any new scientific findings, so the Journal also welcomes submissions describing past valuable data/dataset which has not published yet.

Editorial Board welcomes your submission. Manuscript can be submitted by email in advance. If you want to submit manuscripts by email, please read submission guidelines and contact our editorial office.

Sincerely yours,

Editor in Chief (Akira Kadokura, NIPR)
Executive Editor (Masaki Kanao, NIPR)

**Launched at
January 2017**

Submit Your Paper

Menu

- ▶ About This Journal
- ▶ For Authors
 - For Reviewers
- ▶ Policies
 - Contact Information
 - History of Website

Announcement

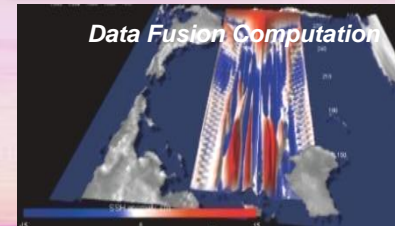
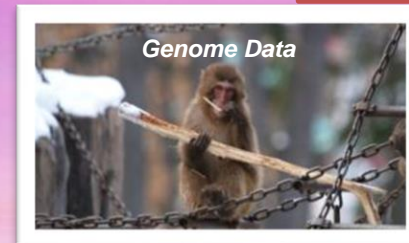
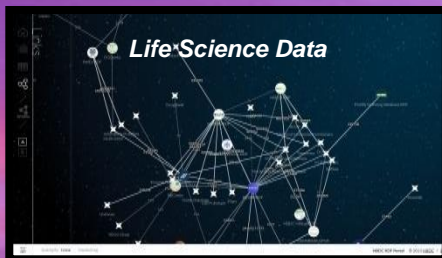
**New Special Issue
Now calling for papers**

- 2017年1月19日創刊、極地研発行の英文データジャーナル
- 2020年10月30日時点： 投稿数22(掲載：17、出版待ち：0、査読中：4、不採択1)
PEDSCの貢献： 編集作業支援、関連実データの登録とDOI付与

International Workshop on Sharing, Citation and Publication of Scientific Data across Disciplines

Joint Support-Center for Data Science Research (DS), Tachikawa, Tokyo
5-7 December 2017

国際集会の開催



国際ネットワーク形成・MoU推進プロジェクト
情報・システム研究機構(ROIS)

Schedule :

5 December @ Lecture Room (4F, NIPR)、6 -7 December @ Multi-Purpose Room (2F, NINJAL)

◆大学共同利用機関法人情報・システム研究機構◆ データサイエンス共同利用基盤施設で 科学データに関わる国際ワークショップを開催

- 平成29年12月5日～7日、大学共同利用機関法人 情報・システム研究機構 データサイエンス共同利用基盤施設は、「**分野を超えた科学データの共有・引用・出版に関する国際ワークショップ**」を開催。
- 様々な所属と研究分野の研究者70名が参加。極域科学・地球惑星科学・生物学・人文学・社会学を含む**学際的視野**に立ち、科学データ全般を扱うオープンサイエンス・オープンデータの最近の動向について議論。
- 分野横断型研究への発展の可能性を含め、**データ共有(相互利用)・データ出版と引用・データジャーナル等**に関する情報交換を重点的に実施。
- 国際連携の枠組みをベースにした学際的データサイエンス推進・関連コミュニティとの連携強化を視野に、今後の同施設における共同利用・共同研究のための**各種プラットフォーム構築の方向性・展望**を検討。



藤井良一機構長、藤山秋佐夫施設長を囲んだオープニングの参加者



シンポジウム会場の様子

International Workshop on Data Science - Present & Future of Open Data & Open Science -

12 – 15 November 2018

Mishima Citizens Cultural Hall & Joint Support-Center for Data Science Research,
Mishima, Shizuoka, Japan

https://ds.rois.ac.jp/article/dsws_2018/

Session Themes :

- ✓ International data activity
- ✓ National data activity
- ✓ Current status of data science
- ✓ Current status of Inter-disciplinary science
- ✓ Industry-academia collaboration, education, capability building
- ✓ Legacy data, historical data, future on data science
- ✓ **120 participants including 20 overseas.**

学際データ関連の国際シンポジウム開催
参加者、計120名(含む、海外・高専)



国際ネットワーク形成・MoU推進プロジェクト
情報・システム研究機構(ROIS)

Monday 12 November 2018;
Public Lecture

“Data Science in daily life”

- History of Tokai Earthquakes and eruptions of Mt. Fuji
by Prof. Nakanishi (Kyoto University)

- Development of new species accelerated by DNA data
by Prof. Tabata
(Kazusa DNA Research Institute)



データサイエンス一般講演会 「暮らしの中のデータサイエンス」

日時：平成30年11月12日（月）16:00～17:30（15:30開場）
場所：三島市民文化会館【ゆうゆうホール】1階小ホール

静岡県三島市で開催するデータサイエンス国際ワークショップの一環として、その初日に一般の方々をお招きする講演会です。どなたでもご参加いただけます。ふるってご参加ください。当日参加も歓迎いたします。【登録不要・入場無料】

自然災害とデータサイエンス

「東海地震と富士山噴火の歴史」

中西一郎 京都大学教授



農業とデータサイエンス

「DNAデータが加速する新品種の育成」

田畑哲之 かずさDNA研究所所長



会場：三島市民文化会館
静岡県三島市一番町20番5号
(三島駅南口より徒歩3分)
TEL：055-976-4455
※駐車場はありませんので、近隣の有料駐車場又は公共交通機関をご利用下さい。



主催・共催：大学共同利用機関法人 情報・システム研究機構、データサイエンス共同利用基盤施設、国立遺伝学研究所
お問合せ：データサイエンス共同利用基盤施設 DSWS 実行委員会 data.ws.loc-2018@nipr.ac.jp TEL：042-512-9254

International Program Office of the World Data System (WDS/IPO) / ISC

- [website](#)
- [Preliminary report](#)

Events

CODATA 23 Conference

Sun Oct 28, 2012

Rio+20 Science Forum Side Event

Thu Jun 14, 2012 @ 12:30 - 02:00PM

6th Scientific Committee Meeting

Mon Apr 30, 2012

Data Challenges for Global

Sharing and Stewardship of Scientific Data for Improved Decision Making and Sustainable Development: Why share data fully and openly?

The Earth's atmosphere, oceans and landscapes are changing rapidly, with human activities being a major driver. Monitoring and modelling these changes is critical to enable governments, civil society and the private sector to make informed decisions about climate, energy, food security, natural hazards, health, and other challenges. Decision-makers and managers must have access to the information they need, when they need it, and in a format they can use.



[Read more...](#)

International Programme Office Inauguration in Tokyo

ICSU's new World Data System (WDS) opened its new office in Tokyo on May 9 in an official ceremony in the presence of the Hon. Tatsuo Kawabata, Japanese Minister for Internal Affairs and Communications, and Prof. Yuan Tseh-Lee, President of the International Council for Science (ICSU).



[Read more...](#)

WDS tackles IPY Data Challenges

The WDS will participate in several of the data related activities organized at the International Polar Year (IPY) 2012 Conference: *From Knowledge to Action* (22-27 April 2012 in Montreal, Canada):

- Tuesday 24 April: In session 2.5.4 Accessing, Sharing and Preserving Data as a Legacy of IPY: A presentation titled *The ICSU World Data System Tackles IPY Data Challenges* will be given by Watanabe Takashi (WDS Scientific Committee)
- Thursday 26 April: *Action forum: The Momentum series: Data Management*.



Sharing and Stewardship of Scientific Data for Improved



From left Chairman Norihisa Doi, Prof. Yuan Tseh-Lee, President of the International Council for Science (ICSU), Dr. Hideo Miyahara, President of the National Institute of Information and Communications Technology (NICT), Onishi, President, Science Council of Japan

CLOSE X

In October 2010, the ICSU Executive Board accepted the offer from the Japanese **National Institute of Information and Communications Technology (NICT)** to host and financially support the **International Programme Office (IPO)** for WDS.

International Symposium

“Global Collaboration on Data beyond Disciplines”

国際交流プログラム：
国際研究集会支援
情報通信研究機構(NICT)

23 – 25 September 2020
Online Conference

Session Themes :

- Collaborations of international data alliances and data systems
- Reinforce and unification of regional data networks
- Development of new technologies for open science
- New movements in data publication under the FAIR principle
- Recent development on data-centric science
- New multidisciplinary data-driven sciences
- Involvement of young generations in data community
- Strategy of future action
- World Data System (WDS) Forum

Website :

https://ds.rois.ac.jp/article/dsws_2020/

Keynote Speakers :

Mark A. Parsons (Editor-in-Chief, Data Science Journal)

Mazlan Othman (Regional Office of Asia and Pacific, International Science Council)

Jens Klump (Mineral Resources, CSIRO in Australia)

Lesley Wyborn (Australian National University)

Masanori Arita (National Institute of Genetics)

Priyanka Pillai (Research Data Stewardship and Health Informatics)

Kassim S. Mwitondi (Sheffield Hallam University)

Organized & Supported by:



大学共同利用機関法人 情報・システム研究機構
データサイエンス共同利用基盤施設
Joint Support-Center for Data Science Research (DS)



大学共同利用機関法人
情報・システム研究機構
Research Organization of Information and Systems

International Symposium

“Global Collaboration on Data beyond Disciplines”

国際交流プログラム:
国際研究集会支援
情報通信研究機構(NICT)

23 – 25 September 2020
Online Conference

Conference Week Schedule:

- ◆ Wednesday 23 September 2020; Symposium (Registration, Sessions; day 1), Reception
- ◆ Thursday 24 September 2020; Symposium (Sessions; day 2), Banquet
- ◆ Friday 25 September 2020; Symposium (Sessions; day 3)

Local Organizing Committee (LOC): (* Chair)

*Masaki Kanao (Polar Environment Data Science Center, DS, ROIS), + 11 members

Advisory Committee (AC): (* Chair)

*Asao Fujiyama (Joint Support-Center for Data Science Research, ROIS), +14 Japanese members, + 13 International members

Website :

https://ds.rois.ac.jp/article/dsws_2020/

Important Dates:

Registration & Abstract submission open: 01 April 2020
Fixing the sessions & program: 01 July 2020
Abstract submission deadline: 01 August 2020
Program booklet online: 01 September 2020
Registration deadline: 20 September 2020
Symposium date: 23-25 September 2020

Organized & Supported by:



大学共同利用機関法人 情報・システム研究機構
データサイエンス共同利用基盤施設
Joint Support-Center for Data Science Research (DS)



大学共同利用機関法人
情報・システム研究機構
Research Organization of Information and Systems

Participants: 412 (pre-registration)

Overseas: 287, Japanese:125

Red; number of max. for a moment in the session

Dates	Time-slot 1	Time-slot 2	Time-slot 3
23 SEP (WED)	Participants: 412 (pre-registration) Overseas: 287, Japanese:125	Opening Addresses, Key-note Talks, 10 Years Event of WDS-IPO 75 participants (05:00-08:00 UTC) (14:00-17:00 JST)	WDS Members' Forum 2020 107 participants (12:00-15:00 UTC) (21:00-24:00 JST)
24 SEP (THU)	Regional Activities on Data in the Asia-Oceania Area 48 participants (01:00-03:30 UTC) (10:00-12:30 JST)	WDS-ORCID Strategic Workshop 60 participants (05:00-08:00 UTC) (14:00-17:00 JST)	Sharing of the COVID-19 Data ap.59 participants (38,38,38) (10:00-16:00 UTC) (19:00-25:00 JST)
25 SEP (FRI)	Forum of Early Career Data Scientists in the Asia-Oceania Area 42 participants (01:00-03:30 UTC) (10:00-12:30 JST)	Promotion of Multi-Disciplinary Data Analysis, Conclusive Addresses 46 participants (05:00-08:30 UTC) (14:00-17:30 JST)	

“Special Collection” for DSWS-2020 in the Data Science Journal

The screenshot shows the Data Science Journal website. The header includes navigation links: Home, About, Contact, Content, Research Integrity, Search..., Log in, and Register. The main banner features the journal's logo and the text "DATA SCIENCE JOURNAL" with buttons for "Start Submission" and "Become a Reviewer". The central article is titled "Special Collection Call for Papers: Multidisciplinary Data Activities Bridging the Research Community and Society". The article text describes a global data community led by the World Data System of the International Science Council (WDS), organized the International Symposium on 'Global Collaborations on Data beyond Disciplines' on 23–25 September 2020. It highlights the significance of multidisciplinary approaches to data management and Open Data, and the vital role of data scientists in developing multidisciplinary data systems. The article concludes by stating that the 'Special collection' will include article submissions that outline best practices for developing data systems and data analysis procedures from a multidisciplinary viewpoint. Contributions are not restricted to presenters at the symposium or to any specific region, rather the editors welcome submissions from anyone globally for whom the symposium themes resonate.

On the right side of the screenshot, there is a social media sharing section with icons for Facebook, Twitter, and LinkedIn. Below that, there are "CONVERSATIONS" from Twitter, including a tweet from Mark Parsons (@chutneyboy) and a tweet from Anirudh Prabhu (@Anirudh_14) mentioning a preprint for the "Encyclopedia of Mathematical Geosciences" entry published on arXiv.

Collection Title:

- 21 Expression of Interest for Article Submission
- Handled by 5 Guest Editors
- Deadline of Article Submission: 31 March 2021

“ Multidisciplinary Data Activities Bridging the Research Community and Society ”

[\(https://datascience.codata.org/\)](https://datascience.codata.org/)

極域データの国際連携

- PEDSC関連の動向 -



✓ データ共有・データ出版

- Kanao, M., T. Baba, R. Edmunds, E. Faustman and J. Wang (Eds.), *Multidisciplinary Data Activities Bridging the Research Community and Society*. Special Collection, Data Science Journal, (in prep.), 2021
- Kanao, M., M. Okada, J. Friddell and A. Kadokura, *Science Metadata Management, Interoperability and Data Citations of the National Institute of Polar Research, Japan*. Data Science Journal, 17: 1, pp.1–6, DOI: doi:10.5334/dsj-2018-001, 2018
- Kanao, M., M. Okada and A. Kadokura, *Metadata Management at the Polar Data Center of the National Institute of Polar Research, Japan*. Highlights of the 2013 International Forum on 'Polar Data Activities in Global Data Systems, Tokyo 2013, Data Science Journal, Vol. 13 (2014), pp.PDA27-PDA31, doi:10.2481/dsj.IFPDA-05, 2014
- Watanabe, T., R. Edmunds, M. Kanao, M. Mokrane, Y. Murayama and K. Finney (Eds.), Highlights of the 2013 International Forum on 'Polar Data Activities in Global Data Systems, Tokyo 2013, Data Science Journal, Vol. 13 (2014), pp.PDA1-PDA102, 2014
- Kanao, M., A. Kadokura, M. Okada, T. Yamnouchi, K. Shiraishi, N. Sato and M. A. Parsons, *The State of IPY Data Management: The Japanese Contribution and Legacy*. Data Science Journal (a special volume of the 1st ICSU WDS Conference in Kyoto 2011), 12 (2013), pp.WDS124-WDS128, doi:http://dx.doi.org/10.2481/dsj.WDS-021, 2013

極域データの国際連携

- PEDSC関連の動向 -



✓ 国際シンポジウム主催

- International Symposium “Global Collaboration on Data beyond Disciplines [Chair of Organizing Committee], Joint Support-Center for Data Science Research, Online Conference, Tokyo, Japan, 23 - 25 September 2020
- International Workshop on Data Science – Present & Future of Open Data & Open Science - [Chair of Organizing Committee], Joint Support-Center for Data Science Research, Mishima, Shizuoka, Japan, 12 - 15 November 2018
- International Workshop on Sharing, Citation and Publication of Scientific Data across Disciplines [Chair of Organizing Committee], Joint Support-Center for Data Science Research, Tachikawa, Tokyo, Japan, 5 - 7 December 2017
- International Forum on “Polar Data Activities in Global Data System” [Chair of Organizing Committee], SCAR, IASC, WDS, MNMS, Ueno, Tokyo, Japan, 15 - 16 October 2013 (now known as Polar Data Forum-I)
- 17th Standing Committee on Antarctic Data Management (SCADM), NMNS, Ueno, Tokyo, Japan, 13 - 14 October 2013
- International Symposium: Fifty Years after IGY - Modern Information Technologies and Earth and Solar Sciences -, AIST, Tsukuba, Japan, 10 - 13 November 2008