

Arctic Data archive System(ADS)

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A new project of the Arctic research (ArCS :Arctic Challenge for Sustainability) has been started in 2015. ArCS is a national flagship project funded by the Ministry of Education, Culture, Sports, Science and Technology. The National Institute of Polar Research (NIPR), Japan Agency for Marine-Earth Science and Technology (JAMSTEC) and Hokkaido University are playing the key roles in this project, and will continue to carry it out for approximately four-and-a-half years from September 2015 to March 2020. Arctic Data archive System (ADS) is responsible for the data management of this project.

Arctic Data archive System (ADS), to promote the mutual use of the data across a multi-disciplinary to collect and share data sets, such as observational data, satellite data, and numerical experiment data. Through these data sets, clarify of actual conditions and processes of climate change on the Arctic region, and further contribute to assessment of the impact of global warming in the Arctic environmental change, to improve the future prediction accuracy.

キーワード：北極域、温暖化、ArCS

Keywords: Arctic, Global Warming, ArCS

DIASメタデータ入力キャンプにおけるオープンサイエンス活動 DIAS metadata input camp as an Open Science activity

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The Data Integration and Analysis System (DIAS) started from 2006. The goals of DIAS are to collect and store earth observation data; to analyze such data in combination with socio-economic data, and convert data into information useful for crisis management with respect to global-scale environmental disasters, and other threats; and to make this information available within Japan and overseas. The current project of phase III has started since 2016 with the aim of its practical operation.

From October 2010, we have released data of DIAS with Document-metadata, describing about dataset in English and Japanese. DIAS has a mission to accelerate the accessibility of data created and maintained by institutions implementing Earth observation projects through creating Document-metadata in the DIAS metadata creation support tool. Anyone can use the DIAS data discovery system by accessing <http://search.diasjp.net>, and can download data files of 270 DIAS released datasets, can access 80 datasets outside DIAS through the system. We are also collecting metadata from related data centers and which is searchable and accessible through the system.

Until now, we have had workshop concerning about metadata input 6 times as “DIAS metadata input camp”. The initial workshop participants were the data owners or providers who should create Document-metadata. The recent workshop increased librarians who are interested in research data management of open science. In order to share how to cataloging research data using Document-metadata, in the workshop, participants had experienced the difference between the metadata of the research data and the metadata of the literature. We report issues about how to manage metadata to data providers and librarian and issues about how to introduce research data to wide users in an easy-to-understand manner using metadata.

キーワード : DIAS、地球観測データ、メタデータ、オープンサイエンス

Keywords: DIAS, Earth Observation data, Metadata, Open Sciecn

Web service for reproducible multidisciplinary data visualization

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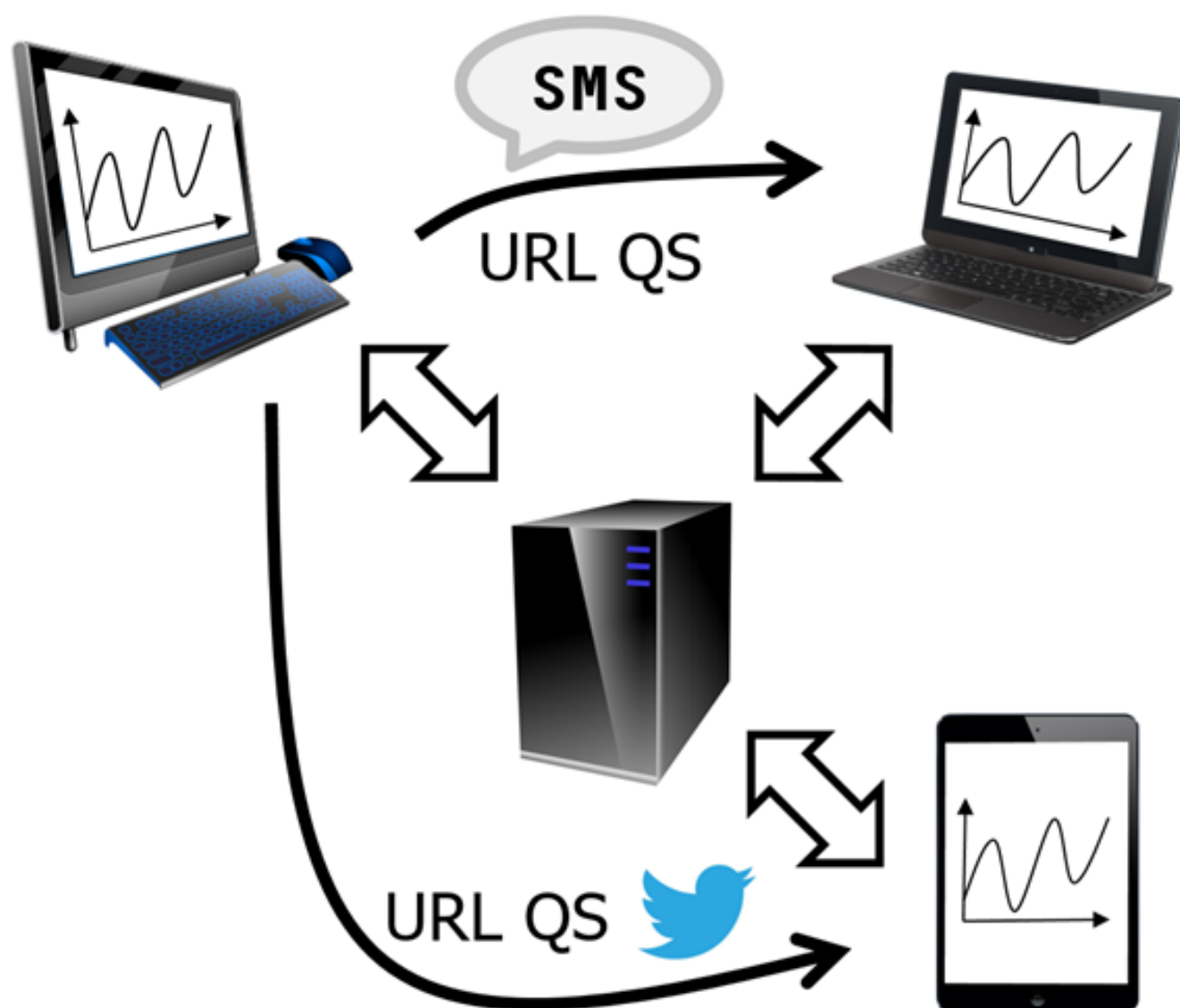
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We propose a new method for reproducible data visualization on a web browser. A web service, Cross-Cutting Comparisons (C3) has a query string (QS)-controllable system to make various interactive charts of earth, planetary and space sciences. By including information of data handling procedures in the QS in an orderly manner, the chart is easy to understand, remake and share via text-based communication tools.

キーワード：オープンデータ、オープンサイエンス、引用

Keywords: open data, open science, citation



Start-up of earth observation by a small laboratory

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In Japan, there is an institution of higher education which is different from university system.

There are National Institute of Technology (NIT) in Japan in total of 51 colleges. The head quarter is located in Tokyo, but the each college is established in most in 47 prefectures in Japan. Because it's scattered about a various part of Japan, those are a strong potential earth observation base.

The NIT, Oita College is located in Oita Prefecture, Kyushu, Japan.

Because the vocational researcher is little again, too, because they're higher educational facilities, but he makes the young generation the subject, there is a problem with the continuity of the study.

However, it's potential because I split regionally.

キーワード：流星、電波観測、多点観測、データ共有、メタデータ、識別子

Keywords: Meteor, Radio observation, Multi-point observation, Data sharing, Metadata, Identifier

Terminological Ontologies and Vocabulary Broker for Open Science

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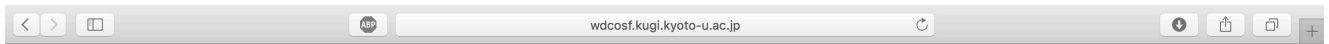
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Keyword vocabularies as part of metadata standards, such as NASA GCMD DIF, SPASE data model, ESPAS keyword ontology or UAT thesaurus are used to tag and qualify specific metadata elements in a standardised way. The different concepts behind the used keywords transport specific semantic knowledge about features of the tagged elements. The scope and the validity of the concepts and keywords normally is limited to a specific domain, such as earth and space physics or astronomy. Natural language is used to express the semantic of the concepts and appropriate keywords. Therefore diverse keywords are used in different metadata standards to express same or very similar concepts. Even in the same domain different keywords are used to describe the same concept. Out of that there is the problem using keywords for the search of data within different repositories. In order to overcome this challenge, we have developed a semantic Web based Vocabulary Broker framework which is connecting appropriate keywords mainly using "skos:closeMatch" relationships for the expression of concordances.

Terminological ontologies derived from the above mentioned metadata standards are processed, and semantic based keyword matches are generated. The original ontology and the mapped parts are managed by the Open Semantic Framework (OSF). The Vocabulary Broker application provides both, schema based browsing and keyword search features. The main idea of the Vocabulary Broker, the semantic (Web) based mashup of keywords, prepares the way for a seamless and overlapping data search within different data repositories, which are managed by different metadata standards. This idea works within a domain or even cross-domain. Therefore our approach is a valuable contribution to mashup data and knowledge within an Open Science environment.

Vocabulary Broker URL: <http://wdcosf.kugi.kyoto-u.ac.jp>

Keywords: Metadata Standard, Keyword Vocabulary, Terminological Ontology, Matching Ontologies, Vocabulary Broker, Open Science



World Data System Vocabulary Broker - Proof of Concept - A +
Linking Research Data

Home | [GCMD Keywords](#) | [SPASE Keywords](#) | [ESPAS Keywords](#) | [UAT Keywords](#)

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Update of Search Results page

Submitted by wdcosf on Fri, 08/26/2016 - 19:55

To improve user experience we modified the presentation of search results when performing a "Concept Search". Instead of just displaying the Concept keyword, we now show additional context information like the keyword scheme to which the term belongs (GCMD, SPASE, ESPAS or UAT respectively), a short definition of the term if available from the vocabulary maintainers, and direct links to <skos:relatedMatch> or <skos:closeMatch> keywords from other vocabularies, if they exist.

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Integration of UAT vocabulary

Submitted by wdcosf on Thu, 08/11/2016 - 22:20

The domain-oriented [Unified Astronomy Thesaurus](#) vocabulary is based on concepts which are also used in neighboring domains, such as geophysics, especially magnetic field research, near earth-space exploration and solar-terrestrial physics. The space weather and space climate domains are covered by UAT concepts too. Therefore we think, the integration of the UAT vocabulary into the Vocabulary Broker is a benefit for astronomers but also geo and space scientists.

Concept Search

Enter your keyword

Recent blog posts

- [Update of Search Results page](#)
- [Integration of UAT vocabulary](#)
- [Update of GCMD Keywords](#)
- [Feasibility test: Integration of context-sensitive SPARQL query to DBPedia](#)
- [Vocabulary Mapping Algorithm updated](#)

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IUGONET Type-A: web service for solar-terrestrial science

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IUGONET is a community to promote solar-terrestrial physics studies, which NIPR, Nagoya Univ., Kyoto Univ., Tohoku Univ., Kyusyu Univ., NICT, NAOJ, JMA and Kanazawa Univ participate in. Our team has mainly developed two products, i.e., UDAS and IUGONET Type-A. UDAS is an analysis software based on SPEDAS (Space Physics Environment Data Analysis Software) and IDL (Interactive Data Language), and IUGONET Type-A is a web service to provide data information and web-based analysis platform 'UDAS web'.

IUGONET Type-A was opened to public on 1 Nov, 2016. This service has functions to show metadata of observational data (e.g., description, acknowledgement [data policy], start and stop date, contact person, data publisher URL, observatory and instrument information), quick-look images (QLs), and how to create these QLs. In particular, thumbnail display of QL plots of retrieved data is very useful to view various data and find correlated data. In addition, UDAS web enables to plot data easily on web browser (PC, smartphone, tablet device and more) without any installation/setup of dedicated software and license. Therefore, IUGONET Type-A is an one-stop web service that enables to search, understand, visualize and test data, and promotes new interdisciplinary studies regarding the solar-terrestrial physics even for researchers in emerging countries.

Furthermore, IUGONET Type-A was built by 'IUGONET Web Application Framework for Science'. This framework can also handle various metadata formats and work on other system. For example, this framework is now being used for Fukushima radiation database, RADARC, and in future we will divert it to some database for various data, such as meteorological data, sequential (ensemble-based) data, and the other scientific data. We believe that this framework is useful to share scientific knowledge between wider communities and can contribute to open science.

キーワード：太陽地球系科学、オープンサイエンス、オープンデータ、データベースシステム

Keywords: solar-terrestrial environmental science, open science, open data, database system

太陽地球系物理学分野における融合研究推進への取り組み Activity for promoting interdisciplinary studies of solar-terrestrial physics

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Inter-university Upper atmosphere Global Observation NETwork (IUGONET) is a Japanese inter-university project whose goal is to effectively utilize upper atmospheric data, including solar and planetary data, which have been separately archived by Japanese universities and institutes for more than 60 years. This project was established in FY2009 originally by Tohoku University, Nagoya University, Kyoto University, Kyushu University, and National Institute of Polar Research, that have been conducting global ground-based network observations of the upper atmosphere, and several other universities and institutes joined in the project later. We present our activities for sharing the data, facilitating interdisciplinary studies of solar-terrestrial physics, and promoting open science.

We have mainly developed two tools, i.e., an analysis software and a metadata database for the upper atmospheric data. The analysis software is based on Space Physics Environment Data Analysis Software (SPEDAS) that is a grass-roots software written by Interactive Data Language (IDL) for space physics community and supports multiple missions. We have provided a plug-in software for SPEDAS, which allows users to load, visualize, and analyze the IUGONET data with SPEDAS. The metadata database enables users to cross-search various kinds of the upper atmosphere data distributed across the IUGONET members. We have registered the metadata of more than 1,000 dataset made in the Space Physics Archive Search and Extract (SPASE) format to our metadata database. Recently, we newly released IUGONET Type-A, which is a one-stop web service based on the metadata database. The IUGONET Type-A provides services to search data, show information of data (i.e., metadata), display quick-look (QL) plot of data, and plot data interactively with SPEDAS. It is useful for users to find interesting solar-terrestrial phenomena and proceed to more detailed analysis of them by using SPEDAS. In order to explain how to use these IUGONET data and tools, we hold tutorial seminars several times a year in Japan and sometimes foreign countries. In addition, we introduce our various activities for data sharing and open science.

キーワード：超高層大気、メタデータデータベース、データ解析ソフトウェア、太陽地球系物理学、IUGONETプロジェクト

Keywords: upper atmosphere, metadata database, data analysis software, solar terrestrial physics, IUGONET project

Juno-Ground-Radio Observation Support Tools

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In the frame of the NASA/Juno mission, an international support activity with observations in the low frequency radio range has been set up. We are proposing a new set of tools directed to data providers as well as users, in order to ease data sharing and discovery. The data service we will be using is EPN-TAP, a planetary science data access protocol developed by Europlanet-VESPA (Virtual European Solar and Planetary Access). This protocol is derived from IVOA (International Virtual Observatory Alliance) standards. Data from all major decametric radio instruments will contribute: Nançay Decameter Array (France), LOFAR (France, Sweden, Poland), URAN (Ukraine), LWA (USA), Iitate Radio Observatory (Japan), etc. Amateur radio data from the RadioJOVE project is also available. We will first introduce the VO tools and concepts of interest for the planetary radioastronomy community. We will then present the various data formats now used for such data services, as well as their associated metadata. We will finally show various tools that make use of this shared datasets. This activity also supports the development of the ESA/JUICE (Jupiter Icy Moon Explorer) mission, and that of the planetary sciences virtual observatory.

Keywords: Jupiter, Decametric Radio Emissions, Juno, Virtual Observatory

世界科学データシステム・アジアオセアニア会議 2017 WDS Asia-Oceania Conference 2017

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ICSUでは、冷戦下の1957-58年に実施された国際地球観測年（IGY）以来、Full and Open Accessの理念のもとに、研究データの長期保全と公開態勢の構築を進めており、自然科学系から社会科学系分野を含む研究データを扱うデータセンター等の国際組織であるWorld Data System (WDS) を2008年に設置している。WDSはデータセンター等のメンバーによって構成されており、現在約90メンバーを数えるが（日本は3機関が加入済）、メンバーの主体は欧米に偏在しており、アジア・太平洋地区の、特に東南アジアは完全な空白地帯となっている。しかし近年この地域は、環境問題や経済活動における重要性が著しく増しているのにも関わらず、データの保全や公開態勢の構築が遅れている。そこで、日本、中国、インド、オーストラリアにおけるWDSメンバーとWDSの活動計画に賛同するデータセンター等との連携により、WDSを軸としたアジア・太平洋地区におけるデータ関連機関のネットワークを構築することを目的とした表記の会議を、2017年9月26-27日に京都市京都大学で開催することとなった。ICSUや日本学術会議が進めている地球規模の持続可能性を実現するための研究活動であるFuture Earth*では、特に東南アジア地区におけるデータの保全・公開態勢の構築が重要課題となっており、本研究会を開催する国際的意義は大きい。

キーワード：科学データ、国際科学会議、世界科学データシステム、アジア・オセアニア

Keywords: Science Data, ICSU, WDS, Asia-Oceania

みんなで翻刻：市民参加の地震史料解読プロジェクト

Minna de Honkoku: online transcription project of earthquake-related historical documents

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京都大学古地震研究会では、2017年1月に「みんなで翻刻【地震史料】」を公開した (<https://honkoku.org/>)。 「みんなで翻刻」は、Web上で歴史史料を翻刻するためのアプリケーションであり、これを利用した翻刻プロジェクトである。ここで、「みんなで」は、Webでつながる人々（研究者だけでなく一般の方をふくむ）をさしており、「翻刻」は、くずし字等で書かれている史料（古文書等）を、一字ずつ活字（テキスト）に起こしていく作業のことである。

古地震（歴史地震）の研究においては、伝来している史料を翻刻し、地震学的な情報（地震発生の日時や場所、規模など）を抽出するための基礎データとする。これまでに地震や地震に関わる諸現象についての記録が多数収集され、その翻刻をまとめた地震史料集（たとえば、『大日本地震史料』、『新収日本地震史料』など）が刊行され、活用されてきた。いっぽうで、過去の人々が残した膨大な文字記録のうち、活字（テキスト）になってデータとして活用しやすい状態になっている史料は、割合としてはそれほど大きくはない。未翻刻の史料に重要な情報が含まれている可能性もあるが、研究者だけですべてを翻刻するのは現実的ではない。

このような状況のなか、「みんなで翻刻【地震史料】」では、翻刻の対象とする史料を、地震に関する史料とし、東京大学地震研究所図書室が所蔵する石本コレクションから、114冊を選んだ。このコレクションを利用したのは、既に画像が公開されており権利関係がはっきりしていること、部分的には翻刻され公刊されているが、全部ではないこと、システム開発にあたって手頃なボリュームであること、過去の地震や災害に関係する史料なので興味をもってもらえる可能性があること、が主な理由である。

「みんなで翻刻【地震史料】」で翻刻できる史料のうち一部は、既刊の地震史料集にも翻刻が収録されている。しかし、ページ数の都合などにより省略されている部分も多い。「みんなで翻刻【地震史料】」によって、114冊の史料の全文の翻刻がそろそろことにより、これまで見過ごされてきた情報を抽出できるようになる可能性がある。石本文庫には、内容の類似した史料が含まれていることが知られているが、全文の翻刻により、史料間の異同の検討などにより、これまでより正確に記載内容を理解できるようになるだろう。

「みんなで翻刻」では、ブラウザ上で動作する縦書きエディタを開発・採用して、オンラインでの翻刻をスムーズにおこなう環境を構築したほか、翻刻した文字数がランキング形式で表示されるなど、楽しみながら翻刻できるような工夫をしている。また、利用者どうしが、編集履歴や掲示板機能によって、翻刻内容について

議論することができる。さらに、くずし字学習支援アプリKuLAと連携している。

正式公開後3週間の時点で、全史料114点中29点の翻刻がひととおり完了している。画像単位では3193枚中867枚（全体の27.2%）の翻刻がひととおり完了している。総入力文字数は約70万字である。

未翻刻の文書を翻刻することがプロジェクトの主たる目的である。これに加えて、Web上で活動することにより、ふだん古文書や地域の歴史、災害史などに興味をもっていない層の方々が、古地震や古災害、地域の歴史に関する情報を届けるきっかけになると考えている。

謝辞：「みんなで翻刻【地震史料】」では、東京大学地震研究所所蔵の石本文庫の画像データを利用した。

キーワード：歴史地震、人文情報学、Webアプリ、クラウドソーシング

Keywords: Historical earthquake, Digital Humanities, Web application, Crowdsourcing



社会との協働が切り拓くオープンサイエンスの未来：日本におけるマルチステークホルダー・ワークショップの報告

Future of Open Science foreseen with society: report on a multi-stakeholder workshop in Japan

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地球環境問題や少子高齢化などの社会課題の解決をめざす研究には、異分野の研究者や政府・自治体、企業、NPO、地域住民など社会の多様なステークホルダーが知識経験を持ち寄り、立場を超えた対話と熟議を通して研究計画の共同立案 (co-design)、知識の共同生産 (co-production)、成果の共同展開

(co-dissemination) を行い、課題解決に向けた意思決定をリードする (co-leadership) という超学際アプローチ (transdisciplinary approach) が重要である。近年、ITやソーシャルデザインなどの技術知を持つプロボノ (専門技能ボランティア) がオープンデータを活用して、社会課題の解決に積極的に関与するようになった。今後、研究者とプロボノが、社会の多様なステークホルダーと協働することにより、研究データのオープン化と市民科学 (シチズンサイエンス) が結びつき、課題解決が促進されるとともに、社会との協働をより強く意識したオープンサイエンスの実現が期待される。しかし、その具体的方法や問題点についてはまだ事例の蓄積が少ない。そこで、2017年1月に京都で、人文・社会科学と自然科学系の研究者、政府関係者、地方行政職員、企業職員、プロボノ (高度技能ボランティア)、図書館員など37名の参加者によるマルチステークホルダー・ワークショップを開催し、グループ対話のテーマを当日決めるアンカンファレンス方式により、社会との協働を念頭に置いた際のオープンサイエンス政策の課題を多角的に検討した。その結果、オープンサイエンスの取り組みは、各研究分野の慣習として積み上げていく必要があること、市民科学にはデータ基盤の共同構築と社会転換のためのアクションという2つの役割があること、研究者コミュニティと社会の知識体系を双方向的に連環する橋渡し人材を魅力的な職業として確立する必要があることなどが気づきとして得られた。本発表では、これらの論点を整理した上で、社会のニーズに照らしたオープンサイエンスの推進に必要な方策を提示する。

キーワード：社会協働による課題設定、未来予測、マルチステークホルダー・ワークショップ、科学技術政策、日本

Keywords: Co-design with society, Foresight, Multi-stakeholder workshop, Science and technology policy, Japan

Research Data Management towards Open Science: An attempt at NIES

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The open science movement is picking up steam worldwide recently. Opening access to journal articles has been a hot topic in open science for about a couple of decades, but opening access to research data (open data) is another critical component of open science. Open data enables a wider group of researchers to build upon existing knowledge by reusing data in novel ways, resulting in increased citations and opportunities for collaboration. However, except some disciplines that already have a culture of sharing research data at least within the communities, appropriate policies and standards for research data management are not consolidated.

National Institute for Environmental Studies (NIES) has recently started to take action on this issue. It started by request from some researchers about minting Digital Object Identifier (DOI) to the research data, which ended up becoming a member of the Japan Link Center, one of the DOI registration Agencies and started minting DOI to research data since 2016. As the beginning was “bottom-up” rather than “top-down”, it has been “reactive approach” rather than “proactive approach”. A working group for promoting open science has been officially formed in 2017, in order to discuss about the institutional repository, data management policies of the institute.

It is not easy to promote open science as an institute though. There are various disciplines in environmental research and in some disciplines, majority of researchers are still reluctant to make their research data publicly available. Resources (both money and human) available for data management is very limited as well. We will present the situation of our attempts to promote open science and discuss about existing issues as a case study of a research institute.

キーワード：オープンサイエンス、オープンデータ、研究データマネジメント

Keywords: Open Science, Open data, Research data management

On recognition of "primary data" producers through DOI minted to "secondary" data (derived from primary data)

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In specific scientific disciplines (e.g., Earth and Planetary Sciences), some studies are conducted based on data directly retrieved from experiments, observations, and/or simulation, etc. (hereinafter "primary" data or PD), while there are other studies based on data generated from compilation and/or further data processing of PD (hereinafter "secondary" data or SD). SD is sometimes generated from processing multiple PD products (e.g., at different geographical locations, at different time, at different observational techniques/conditions and so on). In a research field where SD is more popularly used, the current data-DOI mechanism may not be sufficient in supporting data producers to keep sustainability of their data creation/curation/management works of PDs, because it is often difficult to ensure they receive proper recognition (and with it, enhanced reputation) even when SD generated from their PD products are used frequently and correctly cited in a number of research papers. In this paper, we attempt to focus on this difficulty for PD producers and we propose a revision in a metadata schema that enables the PD producers' work is appropriately recognized.

キーワード：オープンサイエンス、DOI、2次データ

Keywords: Open Science, DOI, Secondary data