

# A Common Interesting on Coordination of Global Change Research Data Repository and Academic Journals

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To enhance the open science including data and discoveries by publishing through either the traditional academic journals or the digital data publishing and repository of global changes studies, The Geographical Society of China (GSC) and the Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences (IGSNRR/CAS) jointly sponsored the National Forum on Coordination of Global Change Research Data Repository and Academic Journals on 21 December 2018 in IGSNRR/CAS. More than 60 publishers and officers joined the forum. They were responsible for academic journals and data publishing from Chinese Academy of Sciences (CAS), Ministry of Education of P. R. China, China Association of Science and Technology, Ministry of Natural Resources of P. R. China, Ministry of Ecology and Environment of P. R. China, Ministry of Agriculture and Rural Affairs of P. R. China, authors, and representatives from Chinese Academy of Press and Publication (Figure 1).

The forum was progressed in a presentation & discussion manner, in which the challenges, hot topics and medium and action plans for global change research data publishing & repository (GCdataPR) and coordination with academic journals were discussed. Prof. Song, X. F., Director of Academic Journal Center, IGSNRR/CAS, presided over the first stage of the forum. Prof. Fu, B. J., President of GSC, pointed out that the earth science was a data-intensive discipline, and data was an important source for the development of earth science. The development of data publishing & sharing could play an important role in promoting the research of geography, resources, and environment in China. The earth science marked the regional attribute. The publication of data with regional and Chinese characteristics in the domestic platform was more positive for China's sustainable development

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and ecological civilization. The coordination of traditional academic journals for discoveries with the digital data publishing and repository could benefit and accelerate the data driven science.

Mr. Dang, S. X., officer from Bureau of Science Communication, CAS, who was in charge of academic journals, stated that the high-impact academic journals in China were mostly sponsored by CAS. The Q1 (top 25%) high impact academic journals in China were mostly from Chinese Academy of Sciences (more than 70%). However, the open journals platform in national level in China had not been established yet. CAS launched a Disciplinary Academic Journals Clusters Project. Three projects were initiated in 2018, the Geography and Natural Resources Academic Journals Cluster was one of them. Moreover, in order to support the digital publication of academic journals, the new style digital journal was also incorporated into the key project program by Chinese Academy of Sciences. *Journal of Global Change Data & Discovery* (bilingual) is a one of them.

Prof. Zheng, D., Editor-in-Chief of the *Journal of Geographical Sciences*, believed that earth science should not only focus on the physical science, but also benefit sustainable development, especially the national or regional ecological civilization. Academic journals could play an important role in improving the international impact, serving and leading scientific research. The evaluation of academic journals relying too much on the impact factors of journals is not conducive to the development of science and technology. Academic journals should not be utilitarian, but serve the society.

Mr. Xiong, X. X., Technical Director of Chinese Academy of Press and Publication, reported on the construction of China knowledge Resource Service Center and National knowledge Service platform. Since the selection of the pilot organizations for the knowledge service model was carried out in 2017, Chinese Academy of Press and Publication has set up relevant standards, established construction plans, and set up the portal of knowledge Resource Service Center. The construction of China knowledge service platform includes knowledge resource management system, open access system, etc. Among them, the open access system of academic journals is one of the important construction contents, which will provide a national communication platform for open access of academic journals in China.

On the integrated development of data publishing and repository, Prof. Liu, C., Executive Deputy Chief Editor and Director of the *Journal of Global Change data & Discovery*, illustrates the importance of establishing the publishing mechanism between data and academic journals, taking “Global Change Research Data Publishing & Repository” as an example. She pointed out that the mechanism of data publishing could not only meet the strong demand of researchers for the publication, dissemination and sharing of scientific data, it was also asked by the Scientific Data Management Law of China, which was published by the State Council in 2018 (Article 22). Global Change Research Data Publishing & Repository had explored a new effectively mechanism concerned with data submission, data peer review, data repository, cost sharing, data sharing, open data statistics, data updating, data citation, data impact score, etc., which can be used for reference by other data publishers. The new publishing mechanism provides authors with value-added services for the publishing of data related to academic journal papers.

Prof. He, S. J., Deputy Secretary General of GSC, Deputy Director of the editorial and

Publishing Committee of GSC, Executive Deputy Director of the Academic Journal Center of IGSNRR/CAS, Deputy Editor-in-Chief of *Acta Geographical Sinica*, took the Geography and Resources Journals Cluster as an example, and clarified the possibility and necessity of integrated development of research data and academic journals. He pointed out that there was an opportunity for the individual editorial offices of independent journals in China; it was the joint action and coordination to each other in a discipline base. In the global change studies, there were 36 journals coordinated with the data publishing and repository. More journals could join also.

Liu, F. H., Director of Editorial Office of the journal of *Data Intelligence*, analyzed the current development of the publication of international data journals. She pointed out that the rising of data journals was a new growing point in the development of international academic journals and deserved to be paid more attention and to be taken as an example to other Chinese academic journals. As for the bilingual (Chinese and English) publishing of Chinese academic journals, Dr. Ma, J. H., editor of the *Journal of Global Change Data & Discovery*, pointed out there was an advantage for journals to international communication because of the English language. The solution of the *Journal of Global Change Data & Discovery* was by bilingual publishing both in Chinese and in English.

On the topic on how to coordinate among the academic journals in discipline base, Prof. Bi, S. W., and Associate Prof. Huang, C. P., from Institute of Remote Sensing and Digital Earth, Chinese Academy of Sciences, Prof. Yu, L., from School of Architecture, Suzhou University, took their article published in *Journal of Global Change Data & Discovery* as an example to illustrate much better effects on timely bilingual dissemination of their academic achievements. Prof. Bi, S. W., developed the algorithms of quantum remote sensing firstly in the world and achieved peer-respected internationally. The denoising algorithm, enhancement algorithm, segmentation algorithm and other achievements of quantum remote sensing were soon recognized by international experts in the same field. He created a new field of remote sensing in big data era and was nominated for chair of the conference on quantum remote sensing held at San Diego, USA, in August 2019. Another case was from Prof. Zhang, L. F., who led the development of the Multidimensional data format (MDD) and MDD data processing computer Software system (MARS), which were published in the *Journal of Global Change Data & Discovery* and Global Change Data Publishing & Repository, respectively. MDD data format was the new data format and it was delivered soon by both in Chinese and English. Prof. Yu, L. combined geography and architecture organically with publishing dataset of Chinese traditional village, which could make a leading for the cross of literary, theory, and art in the big data era. These cases demonstrated that it would be a great benefit for the authors when data integrating with articles and disseminated by both in Chinese and English.

After discussion, a common interest was made as follows:

(1) Coordination of global change research data repository and academic journals

Based on the 36 journals related to the global change studies, which were already joining the partner program of the Global Change Research Data Publishing & Repository, more journals would like to join the program. Global change is a field involving many disciplines and strongly crossing, which causes a great demand for scientific data and scientific papers. The Partnership program of GCdataPR is a new mechanism to promote the integration and

development of scientific data and academic journals and deserves to be continued and developed. Partners of GCdataPR were 36 journals in the first stage and some journals want to join the second stage plan. The plan will evaluate the first stage of the partners and show new partners list by March 1, 2019, which will be based on a free application.

#### (2) Metadata, data products, and data papers

Academic papers and scientific data are closely related and are both important outputs of scientific research. The editorial office of academic journals should actively promote the publication of high-quality datasets and high-level discovery articles by initiating, recommending and encouraging. GCdataPR would provide publication and dissemination platform for the data publishing and repository, and would provide a guide to authors for the publishing dataset and papers with independent intellectual property rights.

#### (3) Citation of scientific data

It is usually necessary to applicate previous data in scientific research. Researchers should follow the international standards of scientific citation, i.e., citation and references. The partners agreed that the editorial office of academic journals would actively promote and strictly require the authors to cite in the reference for the articles and scientific datasets in the application of others' achievement based on certain rules and standards, especially published datasets, datasets from world data center and national data center, which were shared by the whole society and world-wide.

#### (4) Data citation standards, procedures and communication

GCdataPR would coordinate partners to set up working group of citation and to complete the procedures of the citation standards on global change scientific research data in the first half year of 2019. The follow up activities could include the data publishing and sharing in Big Geographical Data Communications in 100 Universities Program, which was sponsored by Geographical Society of China and Institute of Geographic Sciences and Natural Resources Research, Chinese Academy of Sciences since 2017.



**Figure 1** Group photo of the forum