

Current Situation Analysis and Development Recommendations for Geoscience Journals under the Excellence Action Plan: Postprint

Authors: Wang Lili, Yang Yongqiang, Dong Li, cuckoo; rhododendron, Yin Mudan

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Abstract

[Objective] This study aims to analyze the development status of geoscience journals in China during the funding period of the “Excellence Action Plan for China Science and Technology Journals,” explore development recommendations and strategies, and provide reference and guidance for accelerating the construction of world-class science and technology journals in China.

[Methods] Twenty geoscience journals selected for the Excellence Action Plan for China Science and Technology Journals were chosen as research subjects. Basic journal information, database indexing status, open access status, disciplinary distribution, editorial board composition, national/regional distribution of authors, and citation impact data were obtained through the Web of Science database, InCites platform, and official journal websites. Statistical analysis was subsequently conducted on these data from the dimensions of disciplinary distribution, internationalization level, and citation impact.

[Results] The geoscience journals selected for the Excellence Action Plan exhibited relatively low levels of internationalization in manuscript sources and editorial board composition, with citation impact concentrated primarily in China, not yet reaching international average levels. To enhance the international influence of journals, the following development recommendations and strategies are proposed: leveraging university disciplinary advantages in journal operation, constructing international editorial teams, strengthening international dissemination, innovating publishing models, and developing academic journal clusters.

[Conclusion] The citation impact of geoscience journals under the Excellence Action Plan is mainly concentrated in China, with relatively weak influence on geoscience journals in Europe, America, and other regions. Therefore, it is necessary to strengthen international dissemination and cooperation in fields

where China's geoscience research leads and possesses unique advantages, in order to enhance the international influence of these journals.

Full Text

Preamble

Analysis of the Current Status and Development Suggestions for Geoscience Journals under the Excellence Action Plan for China STM Journals

WANG Lili¹), YANG Yongqiang¹), DONG Li²), DU Juan³), YIN Mudan¹)

¹) Editorial Office of *Geoscience Frontiers*, Journal Center, China University of Geosciences, Beijing, 29 Xueyuan Road, Haidian District, Beijing 100083, China

²) Editorial Office of *Earth Science Frontiers*, Journal Center, China University of Geosciences, Beijing, 29 Xueyuan Road, Haidian District, Beijing 100083, China

³) Editorial Office of *International Journal of Disaster Risk Science*, Beijing Normal University, 19 Xijiekouwai Street, Haidian District, Beijing 100875, China

Abstract

[Purposes] This study aims to analyze the development status of geoscience journals in China during the funding period of the “Excellence Action Plan for China STM Journals,” explore development recommendations and strategies, and provide reference for accelerating the construction of world-class scientific journals in China. **[Methods]** Twenty geoscience journals selected for the “Excellence Action Plan for China STM Journals” were chosen as research subjects. Data on basic journal information, database indexing status, open access policies, disciplinary distribution, editorial board composition, country/region distribution of authors, and citation impact were obtained from the Web of Science database, InCites platform, and official journal websites. Statistical analysis was conducted from dimensions including disciplinary distribution, internationalization level, and citation impact. **[Findings]** The selected geoscience journals under the Excellence Action Plan exhibited relatively low internationalization in terms of manuscript sources and editorial board composition, with citation impact concentrated primarily in China and not yet reaching international average levels. To enhance international influence, development recommendations include leveraging university disciplinary advantages in journal operation, building international editorial teams, strengthening international dissemination, innovating publishing models, and developing academic journal clusters. **[Conclusions]** The citation impact of geoscience journals under the Excellence Action Plan is mainly concentrated in China, with relatively weak influence on geoscience journals in Europe, America, and other regions. Therefore, it is

necessary to strengthen international communication and cooperation in fields where Chinese geoscience research leads or has unique strengths to enhance the international impact of these journals.

Keywords: Excellence Action Plan for China STM Journals; geoscience journals; current status analysis; international influence; development suggestions

[Author Contributions] Wang Lili: conceptualized the study and wrote the manuscript; Yang Yongqiang: collected data and literature, revised the manuscript; Dong Li, Du Juan, Yin Mudan: provided feedback and revisions.

Introduction

Geoscience journals serve as crucial platforms for disseminating and exchanging research findings in the Earth sciences, playing a vital role in advancing the field. China's geoscience journals boast a long history and shoulder new missions in the new era, aiming to promote progress in Chinese geoscience, enhance national scientific and technological innovation capacity, disseminate geoscientific achievements and knowledge, and keep pace with global frontiers. In recent years, Chinese universities with geoscience strengths have continuously intensified their efforts, gradually increasing the number of new high-starting-point journals and fostering a group of influential publications that realize the coordinated development of journals and disciplines. Geoscience journals should seize these opportunities, leverage their distinctive features and advantages, comprehensively elevate their academic standards and overall competitiveness, establish themselves domestically while reaching out globally, and contribute to national revitalization and prosperity.

Existing research under the “Excellence Action Plan for China STM Journals” framework has primarily focused on journal development strategies and operational management, international influence and competitiveness, and content dissemination strategies. Specific topics include release strategies and optimization recommendations for digital publishing service platforms, pathways for characteristic journal development, construction and analysis of journal group profiles, evaluation of international influence and development strategies, comparative studies of international performance in key fields, international communication strategies under intelligent recommendation algorithms, and the current status and communication strategies of integrated media construction for scientific journals. While these studies cover leading journals, key journals, Chinese-tier journals, and ordinary journals, and provide in-depth case analyses, no research has yet systematically analyzed the development status of geoscience journals under the Excellence Action Plan. This study aims to fill this gap by systematically analyzing their current status, identifying relevant issues, and proposing targeted development strategies to provide theoretical support and practical guidance for further advancement, offering reference for accelerating the construction of world-class scientific journals in China.

1.1 Research Subjects

This study selected 20 geoscience journals included in the 2019 “Excellence Action Plan for China STM Journals” (hereinafter referred to as the “Excellence Plan”) as research subjects. Statistical analysis was conducted on multiple dimensions including disciplinary distribution, internationalization levels of authors and editorial board members, and citation impact (encompassing the quantity, country of origin, institutional distribution, disciplinary distribution, and source publication types of citing documents) to gain in-depth understanding of the current status of these journals and provide empirical evidence for further enhancing journal quality and international influence.

1.2 Research Methods

Data on basic journal information, database indexing status, open access policies, disciplinary distribution, editorial board composition, country/region distribution of published papers, and citation impact were obtained through the Web of Science (WOS) database, InCites platform, and official journal websites (see , , and Appendix Table 1 for details). Using the InCites platform with the retrieval period set to 2019–2023, journal CNCI values were queried under the “Journals” category (where a CNCI value of 1 indicates citation performance equivalent to the global average for the same discipline, above 1 indicates above-average performance, and below 1 indicates below-average performance). Under the “Organizations” category, host institutions were entered along with corresponding disciplines under “Research Area,” selecting Q1+Q2 zones in WOS to query total publication output from these institutions in the discipline and their total publications in the 20 Excellence Plan geoscience journals. This study employed integer counting methodology, where each country/region contributing to a collaborative paper was counted as one publication.

Current Status Analysis

In 2019, 20 geoscience-related leading, key, and tier journals were selected for the Excellence Action Plan. Among them, 13 were English-language journals and 7 were Chinese-language journals. The supervisory organizations included the Chinese Academy of Sciences (5 journals), China Association for Science and Technology (5 journals), Ministry of Education (7 journals), China Earthquake Administration (2 journals), and one enterprise. Twelve journals were indexed in SCI, 3 in ESCI, and 5 in EI. SCI-indexed journals were primarily located in JCR Q1 and Q2 zones, while ESCI-indexed journals were mainly in Q3 and Q4 zones.

According to WOS subject classification, these 20 Excellence Plan geoscience journals cover disciplines including engineering geology, petroleum engineering, geochemistry, geophysics, geological remote sensing, and multidisciplinary geosciences (see). Among these, five universities served as host institutions: China University of Petroleum (Beijing), China University of Geosciences (Wuhan),

China University of Geosciences (Beijing), Beijing Normal University, and Wuhan University. All five are “Double First-Class” universities with “Double First-Class” disciplines including geological resources and geological engineering, petroleum and natural gas engineering, geology, geophysics, geography, and surveying and mapping science and technology. Based on data, during 2019–2023, China University of Petroleum (East China + Beijing) and Chengdu University of Technology accounted for over 20% of articles published in the 20 Excellence Plan geoscience journals among Q1 and Q2 zone publications in WOS, while other “Double First-Class” universities with geoscience-related disciplines contributed approximately 10%, with the University of Science and Technology of China contributing only 1%. Furthermore, Nanjing University, China University of Petroleum (East China), Chengdu University of Technology, Northwest University, Southwest Petroleum University, University of Science and Technology of China, Tongji University, and other “Double First-Class” universities possess geoscience-related “first-class disciplines” but have no geoscience journals selected for the Excellence Action Plan, presenting a phenomenon of “strong disciplines but weak journals.” Both China University of Geosciences (Wuhan) and China University of Geosciences (Beijing) have journals selected for the Excellence Action Plan, and as shown in , these two institutions published the most geoscience articles in their affiliated journals, yet their proportion relative to Q1 and Q2 zone publications in WOS was only 13.67%, indicating a serious outflow of high-quality papers.

2.2.1 Internationalization of Editorial Boards

The composition of editorial boards (including Editor-in-Chief, Editorial Advisor, Associate Editors, and Editorial Board Members) of Excellence Plan geoscience journals was analyzed (see Appendix Table 1 for details). The leading journal *Petroleum Science* had a relatively high proportion of Chinese editorial board members at 75%; the key journal *Journal of Earth Science* also showed a high proportion at 93%; and the tier journal *Science China-Earth Sciences* had the highest proportion among English-language journals at 95%. In contrast, the tier journal *Geo-Spatial Information Science* had the lowest proportion of Chinese editorial board members at 39%. Among the 13 English-language journals selected, the average proportion of Chinese editorial board members was 62%. Evidently, most Excellence Plan geoscience journals have high proportions of Chinese editorial board members, indicating low internationalization. While some journals have begun to establish preliminary internationalization, they lack diversity, with few editorial board members from countries/regions with substantial geoscience research output such as the United Kingdom, Germany, and France. Increasing international editorial board members is essential for enhancing global influence.

2.2.2 Internationalization of Authors

Analysis of country/region distribution of papers published in Excellence Plan geoscience journals was conducted using the InCites platform and WOS database. During 2019–2023, China was consistently the top contributor to all 20 journals. Specifically, the average proportion of Chinese authors in English-language journals was 65.48%, while in Chinese-language journals it reached 89.99%. Among leading journals, *Petroleum Science* had a notably high proportion of Chinese authors at 85.27%, and the key journal *Journal of Earth Science* also showed a high proportion at 84.03%. Other leading and key journals had approximately 50% Chinese authorship. Among tier journals, English-language journals averaged about 65% Chinese authors, with *Science China-Earth Sciences* and *Acta Geophysica Sinica* showing the highest proportions at 98.81% and 99.39% respectively, significantly exceeding other countries/regions. In contrast, *International Journal of Disaster Risk Science* and *Geodesy and Geodynamics* had the lowest proportions of Chinese authors at 33.23% and 36.30% respectively. Overall, most Excellence Plan geoscience journals have high proportions of Chinese authors, including leading and key journals, indicating considerable room for improvement in international manuscript sources.

2.3.1 Citing Document Volume and Country/Region Analysis

Based on data from the WOS Core Collection, this study analyzed citations to the 20 Excellence Plan geoscience journals, including citing document volume and country/region distribution of citing authors, to further understand their global citation impact and international peer recognition (see Appendix Table 1 for details). During 2019–2023, the key journal *Geoscience Frontiers* received the most citations, followed by the leading journal *Journal of Rock Mechanics and Geotechnical Engineering*. Among these 20 journals, China contributed the most citing documents, accounting for 21.80%–74.34% of all citations. For leading and key journals, Chinese citations ranged from 44% to 51%, while tier journals averaged approximately 49%. Notably, *Science China-Earth Sciences* and *Acta Geologica Sinica-English Edition* received over 70% of their citations from China, far exceeding other countries. In contrast, the tier journal *International Journal of Disaster Risk Science* had the lowest proportion of Chinese citations at 21.80%. These findings demonstrate that most Excellence Plan geoscience journals have established certain citation influence domestically, with impact extending to multiple countries/regions, laying a solid foundation for future internationalization.

2.3.2 Institutional Analysis of Citing Documents

Analyzing institutional affiliations of citing documents for these 20 journals in the WOS Core Collection from 2019–2023 provides further insight into their global institutional citation impact. Chinese universities and research institutions dominated in citation volume, including the Chinese Academy of Sciences,

Chinese Academy of Geological Sciences, China University of Mining and Technology, China University of Geosciences, China University of Petroleum, China Geological Survey, and China Earthquake Administration. Among the top ten citing institutions, all ten for the two leading journals were Chinese institutions. However, among the three key journals, two (*Geoscience Frontiers* and *Journal of Palaeogeography-English*) involved foreign research institutions, and among the 15 tier journals, six (*Earth and Planetary Physics*, *International Journal of Disaster Risk Science*, *Acta Geochimica*, *Geodesy and Geodynamics*, *Geo-Spatial Information Science*, and *Earthquake Engineering and Engineering Vibration*) involved foreign institutions such as the French National Centre for Scientific Research, University of Adelaide, and Indian Institutes of Technology, while other journals' top ten institutions were exclusively Chinese. This indicates that the citation impact of these 20 Excellence Plan geoscience journals is primarily concentrated in China, with relatively weak influence in Europe, America, and other countries with substantial geoscience research output, requiring future strengthening.

2.3.3 Disciplinary Analysis of Citing Documents

Analyzing the disciplinary distribution of citing documents reveals the fields where journals exert citation influence. Based on WOS disciplinary distribution data, this study identified the top ten disciplines contributing citing documents during 2019–2023. The results show that these Excellence Plan geoscience journals (excluding five Chinese-language journals without available data) receive citations primarily from geological engineering, multidisciplinary geosciences, geochemistry and geophysics, water resources, environmental sciences, remote sensing, civil engineering, and energy fuels, with multidisciplinary geosciences showing the highest citation volume. Different journals demonstrate distinct disciplinary impact emphases. For example, the leading journal *Journal of Rock Mechanics and Geotechnical Engineering* and the tier journal *Rock and Soil Mechanics* excel in geological engineering; the leading journal *Petroleum Science* receives considerable attention in energy fuels; tier journals *Earth and Planetary Physics* and *Acta Geophysica Sinica* are most cited in geochemistry and geophysics; and the tier journal *Geo-Spatial Information Science* leads in remote sensing. Most university-hosted journals receive substantial citations in multidisciplinary geosciences, with similar publication scopes. Notably, the key journal *Geoscience Frontiers* garnered over 4,000 citations in multidisciplinary geosciences, with citation influence extending to environmental sciences (2,357 citations), geochemistry and geophysics (1,697 citations), mineralogy (1,191 citations), geology (949 citations), water resources (851 citations), and mining and mineral processing (711 citations), demonstrating strong citation impact across multiple geoscience fields and attracting widespread attention from researchers in diverse research areas worldwide.

2.3.4 Source Publication Analysis of Citing Documents

Analyzing source publication distributions of citing documents reveals which journals cite these publications in the WOS Core Collection, reflecting their citation influence among peer journals. According to Appendix Table 1, during 2019–2023, seven journals received the most citations from their own publications: the leading journal *Petroleum Science*, the key journal *Journal of Earth Science*, and the tier journals *Science China Earth Sciences*, *Acta Geologica Sinica-English Edition*, *International Journal of Disaster Risk Science*, *Acta Geophysica Sinica*, and *Earthquake Engineering and Engineering Vibration*. Among these, *Acta Geophysica Sinica* had the highest self-citation rate at approximately 13.10%, while other journals ranged from 3% to 8%. For four tier journals (*Earth and Planetary Physics*, *Acta Geochimica*, *Geodesy and Geodynamics*, and *Rock and Soil Mechanics*), the top ten citing publications did not include the journals themselves. The key journal *Geoscience Frontiers* had a self-citation rate of only 1.67%, with the top three citing sources being high-impact international journals in the field. Furthermore, analysis of 2022 JCR impact factors and quartile rankings shows that most of the top ten journals citing these geoscience journals are ranked in Q1 or Q2 zones in their respective disciplines, indicating that citing documents for these 20 Excellence Plan geoscience journals possess considerable international influence.

2.3.5 Category Normalized Citation Impact Analysis

The InCites platform was used to query the Category Normalized Citation Impact (CNCI) values of these Excellence Plan geoscience journals (excluding five Chinese-language journals without available data) from 2019–2023, reflecting their average citation performance relative to global peers in the same discipline. CNCI is a robust and unbiased impact metric that eliminates the influence of publication year, disciplinary field, and document type on citation counts, enabling cross-year, cross-discipline, and cross-document-type comparisons of citation impact.

According to , five journals had CNCI values greater than 1: the leading journals *Journal of Rock Mechanics and Geotechnical Engineering* and *Petroleum Science*, the key journal *Geoscience Frontiers*, and the tier journals *Science China-Earth Sciences* and *Geo-Spatial Information Science*. Notably, the leading journal *Journal of Rock Mechanics and Geotechnical Engineering* and the key journal *Geoscience Frontiers* achieved CNCI values exceeding 2.3, indicating citation impact significantly above global disciplinary averages and approaching the performance of world-class geoscience journals. However, ten journals had CNCI values between 0.3 and 0.8, suggesting that overall citation impact of Excellence Plan geoscience journals remains relatively low globally. Therefore, while maintaining current publication scales, these journals should prioritize enhancing overall impact through strengthened promotion and attraction of high-quality manuscripts.

Development Recommendations and Strategies

Key factors including manuscript source scale, founding date, journal visibility, and citation volume collectively constrain overall influence and academic standing. Analysis of selected Excellence Plan geoscience journals reveals an inverse relationship between founding date and influence, particularly for English-language journals—those founded after 2000 generally have higher average impact factor rankings than those founded before 2000. This phenomenon is closely related to cooperation with international publishers. When seeking partnerships with foreign publishers, priority should be given to those with long histories and high reputations. For example, *Research*, a domestic model for high-starting-point journal development, became the first cooperative journal since *Science* was founded in 1880, significantly enhancing its reputation and impact. Based on the above analysis, Excellence Plan geoscience journals exhibit relatively low internationalization in manuscript sources and editorial boards. Although they possess certain citation influence, it has not reached international average levels and remains concentrated primarily in China, leaving considerable room for improvement in international impact. The following recommendations are proposed.

3.1 Leverage University Advantages and Develop Journals Based on Disciplines

The construction of first-class disciplines and the development of first-class journals are mutually reinforcing and interdependent. As journal hosts, universities should attach great importance to their journals' development, invest resources to support editorial teams in strengthening manuscript solicitation, and enhance professional competence to improve academic standards and influence. University journals should closely integrate with disciplinary construction needs, actively promote disciplinary development, and provide platforms for academic exchange and service for faculty and students. Journal content should align with first-class discipline construction, emphasizing content quality and research depth. By enhancing academic influence and strengthening social service capabilities, journals can help universities advance toward world-class status.

According to , some “Double First-Class” universities possess geoscience-related “first-class” disciplines but lack corresponding high-impact journal support (for example, Nanjing University, Chengdu University of Technology, University of Science and Technology of China, and Tongji University currently have no SCI-indexed geoscience journals, with the latter two only having comprehensive university journals). This presents both opportunities and challenges for launching new journals. In 2023, among the 49 selected high-starting-point new journal projects under the Excellence Action Plan, 32 projects from 25 universities were selected, demonstrating that the time is ripe for universities to launch high-starting-point new journals. With geology listed as a priority construction field for high-starting-point new journals in the 2023 Excellence Action Plan, the important role of geoscience journals in supporting disciplinary construc-

tion, promoting academic exchange, and enhancing academic reputation has become prominent. Therefore, universities and editorial teams should actively respond to this development opportunity, establish journals based on university disciplinary characteristics and platform resources, continuously optimize operational mechanisms, and strengthen academic content construction to make greater contributions to research and disciplinary development.

3.2 Optimize Editorial Board Structure and Build International Teams

A key factor in building a successful journal team lies in having a diversified international editorial board. Compared with internationally renowned geoscience journals, the international editorial teams of Excellence Plan geoscience journals lack diversity. Although English-language journals have an average international editorial board proportion of 62%, the source countries are relatively homogeneous, with few editorial members from academic powerhouses such as Europe and the United States, which may affect journal internationalization and attractiveness. Therefore, we recommend actively inviting geoscience experts from European and American academic powerhouses to join editorial boards, bringing broader international perspectives and academic experience to enhance journal visibility and reputation in the international academic community. First, qualified scholars from Europe and America can be identified from the journal's author and reviewer pools and actively invited to join the editorial board. Second, for those who agree to join, their academic backgrounds and research achievements should be actively promoted, encouraging them to submit high-quality articles and using the journal platform to publish and promote these contributions, thereby enhancing international influence and academic reputation. Finally, these European and American scholars should be asked to represent the journal in promoting its latest developments and research achievements through their social networks or conference participation, making the journal known to scholars from more countries. Through these measures, editorial board structure can be continuously optimized, internationalization and diversity strengthened, and journal academic quality and influence enhanced. Such diversified international editorial teams will inject new momentum into journal development and drive greater achievements and recognition in the international academic arena.

3.3 From Key to Excellence: Enhancing Journal Influence

Compared with internationally renowned geoscience journals, Excellence Plan English-language geoscience journals have relatively high proportions of Chinese authors (averaging about 65%) and relatively low global citation impact, concentrated mainly in Chinese citing documents. Journal visibility is a crucial factor constraining development, as high-visibility journals can significantly increase their articles' citation value scores by approximately 20% on average. For instance, when comparing *Geoscience Frontiers* with its benchmark journal

Earth-Science Reviews, the indicators are similar, but the latter's influence remains superior due to its deep-rooted visibility accumulated since its founding in 1966.

Given low journal visibility, we recommend strengthening cooperation and exchange with international geoscience societies and associations, building academic cooperation bridges, and jointly conducting international cooperative projects and academic exchange activities to enhance international influence. For example, *Geoscience Frontiers* actively collaborates with the Deep-time Digital Earth (DDE) international megascience program, responsible for publishing *Deep-time Report*. Through cooperation with international teams, it has completed trend analyses in Earth science research and promoted the journal at international conferences including AGU, EGU, JpGU, IGC, as well as at domestic conferences such as the Chinese Geophysical Society annual meeting and Zhongguancun Forum, continuously expanding its international cooperation network and enhancing visibility. Through the DDE program, *Geoscience Frontiers* organized a “Digital Earth” special issue introducing DDE knowledge system construction and Earth science data standardization achievements, greatly enhancing journal influence. Additionally, *Geoscience Frontiers* actively joined international publishing industry associations such as STM and ALPSP, gradually broadening its international perspective and publication quality.

Excellence Plan geoscience journals, particularly those indexed in ESCI and EI databases, should regularly conduct self-assessments against indexing standards and strive to join more disciplinary and comprehensive retrieval systems to increase exposure and visibility. Although Chinese-language journals primarily serve Chinese readers, providing multilingual publishing options, adding extended English abstracts, and actively joining important databases such as SCI, ESCI, EI, Scopus, WOS, and DOAJ can attract more international authors and readers, thereby enhancing international influence.

3.4 Innovate Publishing Models for Journal Excellence

By examining official journal websites and the WOS database, we analyzed the publishing models of the 20 geoscience journals, specifically whether they adopt full open access publishing. Except for *Journal of Earth Science*, which uses a hybrid model (requiring authors or their institutions to purchase database access for full-text viewing), the other 19 journals employ full open access publishing, with English-language journals charging no APC or OA fees and Chinese-language journals charging page fees. This model allows readers to freely download full-text articles from journal official websites (publisher platforms or domestic self-built sites), enhancing article visibility and dissemination scope. While this approach expands journal visibility and accessibility, compared with hybrid models adopted by most internationally renowned journals—such as *Geology*, which has ranked first among “Geology” journals in WOS for 16 consecutive years—the Excellence Plan English-language geoscience journals' publishing models lack flexibility and diversity.

Hybrid publishing models combine open access and subscription systems, providing more choices for readers while maintaining financial sustainability. This approach not only meets readers' content needs but also offers more possibilities for journal development and operation. Therefore, introducing hybrid publishing models is a worthwhile option for Excellence Plan English-language geoscience journals. Through hybrid models, journals can better balance the relationship between open access and paid subscriptions, achieving broad content dissemination and financial sustainability. Additionally, for different reader groups, English-language journals can develop flexible subscription plans to meet diverse needs, such as adopting the *American Mineralogist* model of voluntary payments starting from \$500 based on authors' funding availability, enabling publication for authors with limited funding. By introducing more flexible and diverse publishing models, Excellence Plan geoscience journals can further enhance their influence and sustainable development capabilities, advancing their position and reputation in the international academic community.

3.5 Strengthen and Expand: Developing Academic Journal Clusters

Cluster-based development of academic journals represents an important model for global scientific journals to strengthen and expand, and a new direction for Chinese scientific journal development. Currently, China's journal clustering and internationalization levels are relatively low, with competitiveness and influence needing improvement, characterized by being small, scattered, numerous but not strong. Establishing journal clusters by professional classification is a beneficial approach, such as medical journal clusters, agricultural journal clusters, and geoscience journal clusters. The China Geoscience Journal Cluster currently includes 244 journals (see the China Geoscience Journal Network at <http://www.geojournals.cn>), providing convenient literature access services for geoscience researchers. However, management and coordination organizations are still lacking, resulting in slow cluster development progress.

Most English-language journals among the Excellence Plan geoscience journals cooperate with international publishers such as Elsevier and Springer Nature, which provide Article Transfer Services to help authors find more suitable journals for their work. If Excellence Plan geoscience journals cooperating with the same publisher could be considered as cluster development with a one-click transfer function in the system, the outflow of high-quality manuscripts could be reduced. For example, *Geoscience Frontiers* currently has a high initial rejection rate of 70%–80%, with some high-quality manuscripts being rejected due to scope mismatch but possessing good quality. By recommending these manuscripts to other Excellence Plan geoscience journals under the same publisher, the process becomes more convenient for authors and enriches extended service offerings.

Conclusion

This study examined 20 geoscience journals selected for the “Excellence Action Plan for China STM Journals,” collecting data on basic information, database indexing, open access status, disciplinary distribution, internationalization levels of authors and editorial boards, and citation impact. Statistical analysis from perspectives of disciplinary distribution, internationalization, and citation impact explored the current development status and proposed targeted recommendations to provide reference for accelerating the construction of world-class scientific journals in China. This study did not separately analyze Chinese and English geoscience journals. Given the low internationalization of authors and editorial boards for Chinese-language journals and the unavailability of some citation impact data in databases, specific development recommendations for Chinese-language journals were not provided. Future research should focus on exploring how to enhance the internationalization of Chinese-language journals and investigate key factors affecting their development and influence, providing more targeted guidance for their internationalization process.

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Note: Figure translations are in progress. See original paper for figures.

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