

Статистика. Комментарии. ЗаметкиStatistics. Comments. Notes

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К вопросу о новом подходе к оценке научной деятельности

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Аннотация. Российская наука переживает период кардинальных изменений, обусловленных текущей международной политической ситуацией, а также набирающими силу тенденциями в сфере Открытой науки и Открытого доступа. Многие авторитетные базы данных, такие как Web of Science и Scopus, заявляют о прекращении индексации российской периодики. Такое решение детерминировано усиливающимися западными санкциями, которые ограничивают предоставление ряда услуг и продуктов в России. Некоторые эксперты видят в этом возможность для укрепления российской науки. При этом нельзя отрицать, что без доступа к международным каталогам она будет отрезана от остального мира. В то же время ситуация может способствовать развитию отечественных наукометрических баз, таких как российский индекс научного цитирования (РИНЦ). Сложившаяся конъюнктура в первую очередь требует продуманных управленческих решений Министерства науки и высшего образования Российской Федерации и, в частности, пересмотра политики Института Дальнего Востока Российской академии наук в отношении практики Открытого доступа. В статье представлена статистика и динамика количества российских статей в международных базах данных.

Ключевые слова: РИНЦ, Web of Science (WoS), Scopus, ИДВ РАН, наукометрия, Открытая наука, Открытый доступ.

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On the New Approach to the Evaluation of Scientific Activity

D.A. Gushchina

Abstract. Russian science is going through a period of some drastic changes due to the current global political situation, as well as with new tendencies regarding Open Science and Open Access policies, which are taking on. Many well reputable databases, such as Web of Science (WoS) and Scopus, declare the

termination of indexing of Russian periodicals. This decision is based on the increasing Western sanctions, which disallow providing a number of services and products in Russia. Some experts see this as an opportunity for strengthening the Russian science, while it can't be denied that it will be cut from the rest of the world without access to international databases. However, it can also assist in developing Russian scientometric databases, such as the Russian Science Citation Index (RSCI). The current conjuncture primarily requires a serious revision of the IFES RAS policy of openness of its scientific activity, as well as adoption of new managerial decisions at the Ministry of Science and Higher Education of the Russian Federation. The article introduces statistics and dynamics regarding the amount of Russian articles in international databases.

Keywords: RSCI, Web of Science (WoS), Scopus, IFES RAS, scientometrics, Open Science, Open Access.

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Introduction

Open Science concept is aimed to share knowledge and make it accessible to all members of the society. This concept is assisting in making the scientific process more democratic, transparent and inclusive. The Open Science movement, which started in the 20th century, refers to various ways of discovering science, especially in the Internet age. Its first pillar is free access to scientific publications. The Budapest conference organized by the Open Society Foundations in 2001 played a crucial role in bringing this issue to the political landscape. The resulting declaration calls for the use of digital tools, such as Open archives and Open Access journals, free of charge for the reader.

Looking back, the movement for Open Science inspired the adoption of a number of regulatory and legislative measures. Thus, in 2007, the University of Liege introduced mandatory storage of its researchers' publications in its institutional Open Repository (Orbi)¹. The Netherlands, which holds the presidency of the Council of the European Union, in April 2016 called for action to transfer research funded by the European Commission to Open Science. European Commissioner Carlos Moedas presented Open Science Cloud² at an open scientific conference in Amsterdam the same year. During this meeting, the Amsterdam Call for Action in the Field of Open Science was also presented. It is a document outlining concrete actions of the European Community for the transition to Open Science³. The European Commission continues to adhere to the Open Science policy, including the development of a repository for digital research facilities, the European Open Science Cloud (EOSC) and indicators for assessing quality and impact.

Databases serve as an aid providing access to repositories and search engines with Open Access. They store academic periodicals, archives and research data. In order to be included in

¹ University of Liege Open Repository. URL: <https://orbi.uliege.be/> (accessed: 15.06.2022).

² Open Science Cloud. URL: <https://eosc-portal.eu/> (accessed: 15.06.2022).

³ The EU's Open Science policy. URL: https://ec.europa.eu/info/research-and-innovation/strategy/strategy-2020-2024/our-digital-future/open-science_en (accessed: 15.05.2022).

a database of this kind, a publisher must follow the Creative Commons (CC) license⁴, which enables free distribution of created material.

However, it must be noted that not all databases follow Open Science directives. Some suggest subscriptions or hybrid variants (partly free access to abstracts) as well as prohibition of Open Access (requirement of organizational subscription). For instance, Academic Search offers different versions of subscriptions: Complete, Elite, Premier, and Alumni Edition. Chinese database Airiti – e-content provider of Chinese academic e-journals, Taiwanese academic e-journals, classical art images has subscription access only. Nevertheless, various services grant both free and subscription access: AcademicLabs, ASCE Library, Dimensions, WorldCat.

On the one hand, Russian periodicals are striving to be indexed in well reputable bases such as Scopus, Web of Science (WoS). On the other hand, there is a clear upward trend in developing Russian alternative repositories and platforms for periodicals and scientific data, as the situation for Russian scientific and educational organizations has been seriously complicated by sanctions against Russia and its' institutions. For instance, there is a list of the leading peer-reviewed scientific journals composed by the Higher Attestation Commission of Russia in the list of periodicals, recommended for publication of the main scientific results of dissertations for the degree of candidate and doctor of sciences. At the moment it is turning into a suitable Russian alternative for reputable repositories and platforms of foreign origin.

The Current Situation

The creation of a stable system of Russian scientific journals of international level is an essential component of the success of a set of measures aimed at increasing the level of scientific output of Russian research. Without the creation of such a system, it is impossible to achieve the set performance indicators of Russian science. The purpose of supporting the system of scientific publications is to increase the effectiveness of scientific research in Russia and achieve the specified program indicators of this effectiveness.

Referring to V.V. Putin's 2012 decrees among which the significance of increasing the share of publications of Russian researchers in the total number of publications in world scientific journals was highlighted, it may be stated that the results unfortunately haven't been fully achieved. According to the decree, by 2015, the share of publications by Russian researchers in the total number of publications in world scientific journals indexed in the Web of Science database should increase to 2,44 percent⁵.

Comparing the statistics of 2020 and the one of 2009, Russia's share in the global number of citations has increased 1.75 times in Web of Science and 2.02 times in Scopus. However, the works of Russian authors are referred to much less frequently than the world's average.

At the same time, the number of articles by authors from Russia in scientific journals indexed by Web of Science (1.9 times) and Scopus (2.28 times) has advanced significantly, but this has had almost no repercussions on the country's position in world rankings.

⁴ Creative Commons (CC) license. URL: <https://creativecommons.org/licenses/by/4.0/> (accessed: 15.05.2022).

⁵ Ukaz Prezidenta Rossiyskoy Federacii ot 07.05.2012 g. № 599 "O merah po realizacii gosudarstvennoy politiki v oblasti obrazovaniya i nauki" [Decree of the President of the Russian Federation of 07.05.2012 No. 599 "On measures to implement state policy in the field of education and science"]. URL: <http://www.kremlin.ru/acts/bank/35263> (accessed: 15.05.2022). (In Russian).

In 2020, as in 2009, in the ranking of countries by the sum of articles indexed in Web of Science, Russia took the 14th place (63 251 articles). In Scopus, Russia’s position moved up two steps to the 12th position (73 496 articles). In both Scopus and Web of Science lagging behind the leader (China) is considerable. The leading country has 7 times more articles indexed (pic. 1) [Салтанова].

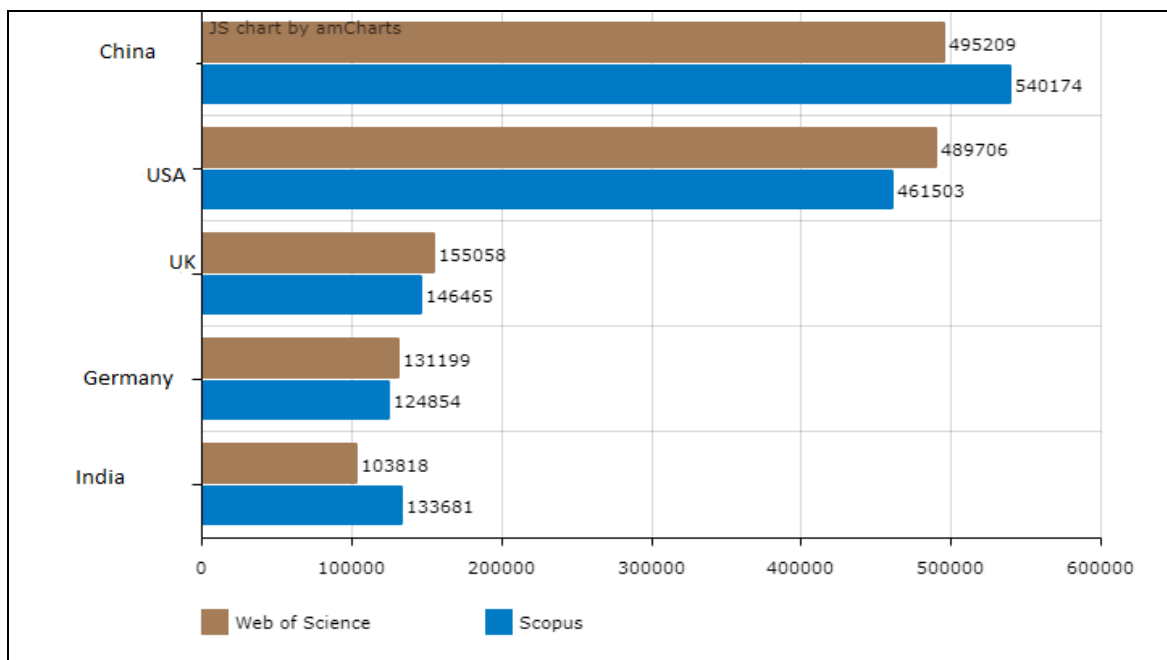


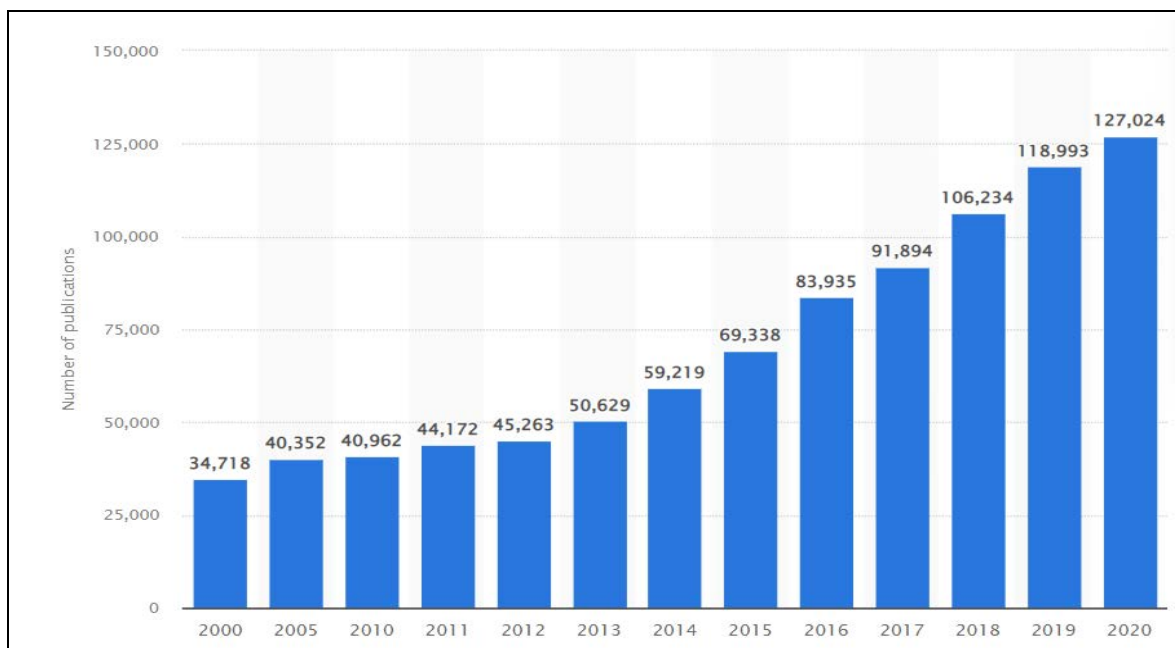
Fig. 1. Top-5 countries and their amount of publications in Web of Science and Scopus on the 4th of September 2020 (China, the USA, the UK, Germany, India).

Source: [Салтанова].

The number of scientific publications by Russian authors included into Scopus has more than tripled over the period from 2000 to 2020. In 2020, the figure reached nearly 127 thousand, which was an increment of around 8 thousand correlating with the preceding year (pic. 2). The background for it could be requirements imposed on scientists. The availability of publications in international databases can be taken into account for a variety of purposes. For example, in the current methodology, with the help of which the Ministry of evaluates to what extent organizations fulfill a state task, one of the criteria is publication activity. The highest rating is given to those scientists, who publish their articles in foreign journals. Moreover, the availability of publications in international databases (primarily Web of Science and Scopus) is a mandatory requirement for obtaining various grants.

In addition, the research productivity (how many papers are published) and (or) the influence (how often they are cited) of universities are taken into account, when compiling world rankings of educational institutions.

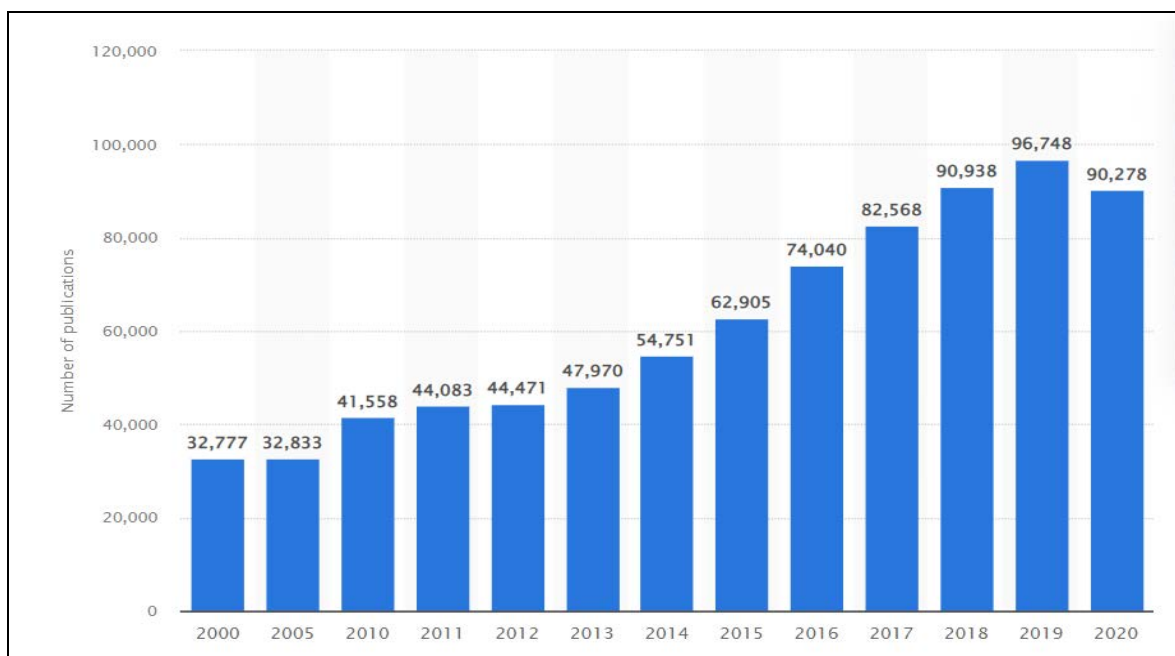
These indicators are taken into account in the category “Research” of different lists of universities and directly affect their position in the list. Moreover, some ratings cannot be entered at all without having performance thresholds.



Pic. 2. Number of publications by Russian authors indexed in Scopus from 2000 to 2020.

Source: Number of publications by Russian authors indexed in Scopus from 2000 to 2020. URL: <https://www.statista.com/statistics/1148075/number-of-russian-publications-indexed-in-scopus/> (accessed: 15.05.2022).

The number of scientific publications by Russian authors included into Web of Science has multiplied significantly over the course of 20 years from 2000 to 2020. The numbers shrunk for the first time in 2020, when the number exceeded 90.278 thousand, which was a downturn by nearly 6 thousand publications compared to the previous year (pic. 3).



Pic. 3. Number of publications by Russian authors indexed in Web of Science from 2000 to 2020.

Source: Number of publications by Russian authors indexed in Scopus from 2000 to 2020. URL: <https://www.statista.com/statistics/1148082/number-of-russian-publications-indexed-in-web-of-science/> (accessed: 15.05.2022).

Considering recent political events, which are connected with the development of the Ukrainian conflict, Russian scientific society has been influenced dramatically. It can be suggested that Russian scientists are about to be cut out from the international arena. In this circumstances Russian science may appear to be rather isolated from the rest of the world. International research, scientific cooperation and access to up-to-date technologies are about to become unavailable. Connections with international scientific society might start fading. This can cause numerous issues, among which is lagging behind. This reason causes many researchers to flee the country. Difficulties do not appear to be so bad for theorists, as they keep using the Internet for communication. However, for practitioners it's comparatively challenging.

In addition, the joint suspension services statement of the publishers, announced on March 31, was signed by Elsevier, Springer Nature, IOP Publishers, Emerald Publishing and other major publishing houses⁶. Elsevier, for instance, publishes more than 2 thousand scientific journals and owns the Scopus database. The owner of the second largest database, Web of Science, Clarivate company, also reported business closure in Russia on the basis of its position against events taking place in Ukraine⁷.

Because of it, according to experts, the country will lose access to 97.5% of the world's scientific products [Дульнева].

Contemplating with the current political situation, due to restrictions on access to foreign databases and libraries, Russian databases seem to be more favorable for local scientists. The government supports scientists, so the record keeping of publications in international databases and reports at international conferences is temporarily stopped. The Ministry of Science and Higher Education supported the suspension of the indexation of publications of Russian scientists in international databases, with which the Government of the Russian Federation agreed on March 21⁸. Minister of Science and Higher Education V. Falkov called for “ensuring the support of Russian scientific publications”. Moreover, the participation of researchers in foreign scientific conferences will remain without indexing. A moratorium has been announced for the year of 2022.

Minister of Science and Education V. Falkov explained the necessity to reduce the share of bibliometric and scientometric indicators in the assessment of research teams that are engaged in fundamental, applied and socio-humanitarian research⁹.

In this necessary measure some see a step towards development of Russian periodicals and bases. As indicated on the website of the scientific electronic library Elibrary.ru, there are 18,392 scientific journals published in Russia (data from 01.06.2022). The largest publishers are the Academy of Sciences, institutes and universities.

⁶ Multi-publisher statement on Ukraine. URL: <https://www.emeraldgroupublishing.com/multi-publisher-statement-ukraine> (accessed: 15.05.2022).

⁷ Clarivate to Cease all Commercial Activity in Russia. URL: <https://clarivate.com/news/clarivate-to-cease-all-commercial-activity-in-russia/> (accessed: 15.05.2022).

⁸ A moratorium on the availability of publications indexed in international databases has been introduced. URL: https://minobrnauki.gov.ru/press-center/news/?ELEMENT_ID=48669 (accessed: 15.05.2022). (In Russian).

⁹ The authorities have imposed a moratorium on the registration of scientific articles in international publications. URL: <https://www.rbc.ru/society/21/03/2022/6238915c9a794774a68b0245> (accessed 22.06.2022). (In Russian).

The current situation	
Total number of journals	74529
Russian journals	18392
Currently published	14865
Indexed in Russian Science Citation Index	5671
Full-version publications	13399
Open access	7502
Russian journals	8157
Russian journals in open access	6832

Pic. 4. The amount of journals indexed in Elibrary.ru

Source: Elibrary.ru

In addition, for publications created in Russia, there is a list for leading journals, which has been compiling with the assistance of RAS experts for several years now. Their articles can be equated with publications in journals from the international databases as Web of Science and Scopus. Based on materials from 01.03.2021 there are 2574 scientific journals on the list¹⁰.

Russian organizations have joined the process of reviewing the assessments of scientific activity. In particular, the IFES RAS pays special attention to the problems of scientometrics [Горчакова, Казаков].

In the recent letter to the Minister of Science and Higher Education from the Acting Director of the IFES RAS, doctor of philology, K.V. Babaev, it was advised to develop a replacement for Scopus and WoS citation indexes, to adjust the criteria system¹¹.

The following new evaluation standards were mentioned:

1. The number (or score equivalent) of article publications in the RSCI system.
2. The number (or score equivalent) of article publications in the RSCI core.
3. Individual monographs published under the official stamp of scientific educational institutions.
4. The number (or score equivalent) of scientific publications included in the “Chinese National Science Knowledge Base” (CNKI), which can be equated to publications in the core of the RSCI.
5. The number (or score equivalent) of analytical notes prepared on the instructions (request) of public authorities, state corporations, other government agencies or received a positive assessment from these departments (analytical notes are equated to article publications in the

¹⁰ Spisok recenziruemyh nauchnyh izdaniy VAK 2022 [List of peer-reviewed scientific publications of the Higher Attestation Commission 2022]. URL: <https://www.internauka.org/perechen-recenziruemyh-nauchnyh-izdaniy-vak-2019-2020> (accessed: 22.06.2022). (In Russian).

¹¹ IDV RAN predlozhl Minobrnauki RF novuyu sistemu kriteriev vpolneniya Gosudarstvennogo zadaniya [IFES RAS proposed the Ministry of Education and Science of the Russian Federation a new system of criteria for the fulfillment of a State task]. URL: <https://www.ifes-ras.ru/ru-RU/news/250> (accessed: 09. 06.2022). (In Russian).

RSCI). In addition, Russian President Vladimir Putin has declared 2022-2031 the Decade of Science and Technology in Russia. By presidential decree, a coordinating committee for the Decade of Science and Technology was formed¹².

To sum up, the Ministry of Science and Higher Education stated that blocking access to the Web of Science and Scopus scientific citation databases would not cause large-scale difficulties for the Russian scientific community and would not bring irreversible consequences. The Ministry of Science and Higher Education, the Russian Academy of Sciences, heads of leading universities and research institutes of Russia are working on creating a national system for evaluating the effectiveness of research and development, the Ministry said at the time. The country also plans to create its own international citation database¹³.

Furthermore, on May 26, 2022 the RAS and National Electronic Library “eLibrary.ru” signed a new cooperation agreement¹⁴, which is the continuation and development of the previous one of July 3, 2014. Within the framework of it a bibliographic database of publications in leading Russian scientific editions was created and received recognition as Russian Science Citation Index (RSCI). This agreement is aimed at development of methodological apparatus, individual methods and tools for analysis, evaluation and selection in RSCI and the “Core of the RSCI” of works and publications of various types, including serial publications, scientific periodicals (journals), collections of scientific events of the national and international levels – seminars, conferences, congresses, as well as book publications – monographs, collections of articles and other types of works of scientific and technical literature.

Conclusion

1. Imposed sanctions and restrictions on Russian organizations regarding the admission of scientists to foreign databases of scientific citation forced the Russian Government to revise the assessment of the scientific activities of Russian scientists. The Government announced the beginning of such work.

2. The introduced restrictions have affected many scientific and educational organizations that are also interested in normalizing the situation and the emergence of adequate rules and requirements for conducting scientific research.

3. IFES RAS took part in the discussion of the new system of evaluation of scientific activity, offering the Ministry its recommendations.

4. The creation of a new system should not only minimize the damage caused by the restrictions imposed against Russia, but also lead to the intensification of scientific activity in the country, the development of science and advanced technologies. This is exactly the task that should be faced by those, who currently make decisions at the state level.

¹² Ukaz Prezidenta Rossiyskoy Federacii ot 25.04.2022 № 231 “Ob ob'yavlenii v Rossiyskoy Federacii Desyatiletiya nauki i tekhnologii” [Decree of the President of the Russian Federation No. 231 dated 04.25.2022 “On the Declaration of the Decade of Science and Technology in the Russian Federation”]. URL: <http://publication.pravo.gov.ru/Document/View/0001202204250022> (accessed: 07.06.2022). (In Russian).

¹³ Minobrnauki: blokirovka baz dannyh nauchnogo citirovaniya ne stanet problemoy dlya uchenyh RF [Ministry of Science and Higher Education: blocking scientific citation databases will not be a problem for Russian scientists]. URL: <https://nauka.tass.ru/nauka/14350755> (accessed: 07.06.2022). (In Russian).

¹⁴ Press-reliz o podpisanii soglashiya o sotrudnichestve mezhdru RAN i NEB [Press release on the signing of a cooperation agreement between the RAS and National Electronic Library]. URL: https://elibrary.ru/projects/rscli/ran_2022.pdf (accessed: 07.06.2022). (In Russian).

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