



DOI: 10.22363/2618-8163-2026-24-1-56-70

EDN: XBSBEU

Research article

## **GigaChat rhetorical potential for transforming metadiscursive patterns in Russian academic writing**

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**Abstract.** The study is relevant due to the need to improve students' academic writing skills; the relevance is also substantiated by the ongoing transformation of scientific communication under the influence of artificial intelligence (AI). The study presents the results of a comparative analysis of metadiscursive components in Russian-language abstracts written by undergraduates of engineering faculties before and after AI editing. The research focuses on the effectiveness of GigaChat neural network model in editing scientific texts in terms of the specific scientific and technical communication. The author used methods of quantitative and interpretative analysis. The research material consisted of 40 Russian-language abstracts written by the 2nd year undergraduates in engineering. The study revealed the frequency dynamics of metadiscursive markers before and after AI text processing. The results showed that the number of boosters, attitude markers, and self-reference markers in the texts created with the developed prompts and edited by GigaChat reached the reference level, i.e. the normalized frequency of the metadiscursive tools in the abstracts written by the leading researchers in technical sciences. The increase in hedging markers above the reference level softened the categorical statements. Despite GigaChat failed to achieve the reference frequency for all metadiscursive markers after AI text editing the academic style significantly improved and came closer to the metadiscursive canons of scientific and technical communication. The research studies transformations in scientific communication under the influence of AI and reveals the potential for optimizing the written scientific speech of novice researchers.

**Keywords:** artificial intelligence, academic writing, metadiscourse, text editing

**Conflict of interests.** The author declares no conflict of interests.

**Article history:** received 02.08.2025; accepted 11.11.2025.

**For citation:** Boginskaya, O.A. (2025). GigaChat rhetorical potential for transforming metadiscursive patterns in Russian academic writing. *Russian Language Studies*, 24(1), 56–70. <http://doi.org/10.22363/2618-8163-2026-24-1-56-70> EDN: XBSBEU

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## Introduction

The undergraduates' writing skills formation is an urgent task of modern education. That is why the discipline "Academic Writing" / "Fundamentals of Academic Writing" has been introduced into the master's programs of Russian universities<sup>1</sup>. The ability to create the scientific text, to express the research position and the results of one's own scientific activity in it, to correctly use citations and references, and the general ability to apply methods and techniques of creating a scientific text are necessary for successful academic communication (Zashikhina, 2021; Korotkina, 2018). However, this requires time and practice; according to T.M. Zashikhina (Zashikhina, 2021), students have difficulty mastering the competencies necessary to create scientific texts, and teachers are not satisfied with the students' results. In this context, AI can become an effective tool for structuring ideas, checking style for compliance with genre and disciplinary rules of a scientific text, editing and formalizing the parts of the text.

Despite AI technologies are assessed differently in the scientific community (Ivanova, 2024), they significantly influence various aspects of scientific communication, which is noted in scientific works. Thus, I.E. Rymanova (Rymanova, 2023) pointed out the potential of AI in developing written speech, e.g. in searching for sources and checking grammar and spelling. Z. Mo and P. Crosthwaite showed that generative language models can express the author's position and interact with the reader of academic texts (Mo, Crosthwaite, 2025). M. Warshauer notes that the main advantage of AI is its transformational pedagogical potential; banning the use of AI deprives students of the opportunity to learn how to use this tool responsibly and effectively (Warschauer et al., 2023).

Modern AI tools perform a wide range of functions (Ivakhnenko, Nikolskiy, 2023; Ou et al., 2024; Pecorari, 2023), so they are widely used for writing and editing scientific texts. This is due to three key factors: progress in machine learning, which has significantly increased the generative capabilities of AI; the growing demand for effective written communication tools and the requirement to increase the number of employees and students' publications.

Though the number of works on the role of AI in academic discourse increase, its influence on the rhetorical parameters of writing and on the use of a metadiscursive component, remains poorly understood. Moreover, "teaching

<sup>1</sup> See, e.g.: Curriculum for Academic writing. Retrieved November 12, 2025 from [https://mo.rane-pa.ru/sveden/education/EduOp/RPD\\_Econom\\_Mag](https://mo.rane-pa.ru/sveden/education/EduOp/RPD_Econom_Mag); Curriculum for Academic writing. Retrieved November 12, 2025 from <https://www.hse.ru/data/2019/02/02/1073810760/program-725315137-wCIX-RQGseQ.pdf>; Curriculum for Academic writing. Retrieved November 12, 2025 from [https://www.istu.edu/sveden/education/napravleniya\\_table?level=3&year=2025&nosubdiv=17](https://www.istu.edu/sveden/education/napravleniya_table?level=3&year=2025&nosubdiv=17); Curriculum for Academic writing. Retrieved November 12, 2025 from [https://www.conservatory.ru/sveden/files/ziq/XOR\\_mag\\_RPD\\_Akademicheskoe\\_pisymo\\_2025.pdf](https://www.conservatory.ru/sveden/files/ziq/XOR_mag_RPD_Akademicheskoe_pisymo_2025.pdf); Curriculum for Academic writing. Retrieved November 12, 2025 from <https://programs.edu.urfu.ru/media/rpm/00045853.pdf>

aimed at the systematic and consistent development of skills in metadiscursive organization” of written scientific speech are not actively used in Russia (Utkina, Kostareva, 2021). At the same time, the development of metadiscursive skills is of particular importance in the modern academic environment. Metadiscursive elements help readers interpret, organize, and perceive the material in accordance with the author’s intent and the values of a particular discursive community. The ability to use these tools correctly is especially important for writing scientific papers, where persuasive arguments directly affect the perception of the work by the scientific community. Those few studies (Jiang, Hyland, 2024; Xu, 2025; Zhang, Zhang, 2025) which focus on the metadiscursive aspect of AI-generated scientific texts use English-language material. The influence of AI on Russian-language meta-discourse in scientific communication remains unexplored. Our **study is aimed** at identifying an impact of AI (ChatGPT) editing on metadiscursive characteristics of academic texts written by undergraduates of technical specialties.

The aim was achieved through the following tasks:

- 1) to compare the frequency of meta-recursive markers in the abstracts written by undergraduates and their versions edited by GigaChat;
- 2) to provide a qualitative analysis of how AI editing alters the levels of categoricalness, evaluative language, and objectivity in student writing.

### **Methods and materials**

The material of this study was 40 Russian-language abstracts written by 2nd-year engineering undergraduates, who previously learned the concept, functions, and categories of meta-discourse, its specifics in scientific communication.

The total volume of abstracts was 5,676 words, approximately 140–150 words in each text. These abstracts made up corpus 1 (C1). Then the abstracts were uploaded to the AI system with specific instructions in the prompt.

The reproducibility of the results was ensured by the structured sampling method. The instruction was based on the analysis of the discursive norms of scientific and technical texts. It defines the role (“an expert in technical sciences”), which sets the appropriate context and style for the model; sets a task (“edit the abstract...”), which clearly indicates the action; and describes the context (“consider the specifics of scientific and technical discourse (degree of categoricity, evaluativeness, objectivity”), which clarifies the target metadiscursive parameters; gives direct examples of the desired reference style.

The abstracts edited by AI are included in the corpus 2 (C2). Their volume was 5892 words.

The abstracts were edited with GigaChat, a Russian AI chatbot developed by Sber in 2023. Unlike the world-famous ChatGPT or DeepSeek, GigaChat is

designed specifically for Russian-speaking users. GigaChat speaks Russian fluently, it understands the nuances of Russian speech and is ideally suited to work with texts in Russian; it takes into account grammatical subtleties, stylistic norms, and cultural peculiarities.

The study included three stages:

1. Identifying metadiscursive markers.
2. Statistic analysis of the varying frequency of metadiscursive markers in C1 and C2 with the help of the log likelihood criterion (Log-Likelihood, LL) and the significance level (pp-value). To quantify the magnitude of statistically significant differences, the effect was calculated with the %DIFF formula, which shows the proportional difference between the normalized values in the corpuses.

3. Assessing the specifics of scientific and technical communication by comparing the results obtained with the results of a metadiscursive analysis based on the material of 100 abstracts to scientific articles published in 2020–2025 in six leading Russian engineering journals in the RSCI database: Aviation Materials and Technologies, Physical Mesomechanics, Proceedings of VIAM, Bulletin of Mechanical Engineering, Engine Engineering, Bulletin of MAI. The number of meta-recursive markers in these abstracts was taken as a reference level.

Since the absolute frequency indicators can be distorted due to the unequal number of words in the texts in C1, C2, and C3, a normalized frequency (per 1000 words) was used in the analysis.

## Results

In general, GigaChat conveyed the categoricity, persuasiveness, and objectivity of modern Russian-language scientific and technical discourse. However, it did not consider that the engineering discursive community adhere to a more categorical style of presentation and focus on empirically proven facts. Nevertheless, the increased hedging markers made the statements sound as valid reasoning rather than indisputable knowledge, which is a sign of the author's professional competence. In cases where the graduate students made categorical conclusions about cause and effect based on limited data, mitigation of the statements seemed justified.

AI increased the evaluativeness by adding expressive elements to emphasize certain aspects of the study and made the texts more convincing and expressive. Markers of critical reflection (for example, important) were added to make the texts reflective. AI did not only mechanically add markers but also structured the narrative; this helped to express its own position in accordance with academic conventions and brought the number of attitude markers closer to the reference level.

Being focused on depersonalized scientific texts, AI removed personal pronouns so that the text looked “independent of the author.” This change also increased the level of compliance with the norms of academic writing in the technical sciences.

## Discussion

Metadiscursive tools ensure effective communication in the scientific environment, and their nature and frequency depend on the field of knowledge. Previous empirical studies have revealed stable patterns specific to various fields of knowledge (Boginskaya, 2022; Dontcheva-Navratilova, 2021; Khedri, Heng, Ebrahimi, 2013; Tikhonova, Kosycheva, Golechkova, 2023). Thus, abstracts to articles on applied linguistics and economics (Khedri, Heng, Ebrahimi, 2013) showed that linguists are more likely to use metadiscursive tools to prevent communication failures and maintain dialogue with the reader than economists. Another study (Boginskaya, 2022) showed that scientific texts on applied linguistics contain 4.2 times more interactive markers than scientific and technical articles; linguists prefer hedges and avoid categorical statements, while engineers more often use boosters and emphasize that the truth is self-evident and does not need proof.

In the socio-humanitarian sciences, where knowledge is formed through the interpretation of social phenomena (Becher, Trowler, 2001), scientists actively use meta-discourse to structure argumentation and engage the reader in dialogue. On the contrary, exact sciences focus on demonstrating empirical data rather than rhetorical persuasion (Hyland, 2005) use metadiscursive means less often. The high frequency of boosters in the exact sciences is explained by the authors’ belief in the self-evidence of their conclusions, which do not require additional justification. These disciplines rely on experimental data and exclude counterarguments. The authors present their conclusions categorically and appeal exclusively to verifiable facts. This epistemic ratification, where subjective interpretations are transformed into collectively accepted facts, is the essence of scientific belief.

The revealed interdisciplinary differences in the use of meta-discourse reflect deep discursive conventions and fundamental differences in the paradigms of knowledge construction; each scientific field develops its own rhetorical tools for qualifying statements and interacting with the reader.

To identify metadiscursive markers, we used the classification of K. Hyland (Hyland, 2005), which includes *hedges* which mitigate the categorical statements (epistemic verbs, alethic adjectives and adverbs, approximant adverbs, adjectives and adverbs with ambiguous semantics), *boosters* which emphasize the author’s confidence and exclude alternative interpretations (emphatic adverbs and adjectives, verbs of deontic modality, evidential verbs, and absolute quantifiers), *relationship markers*, which express the significance of research or

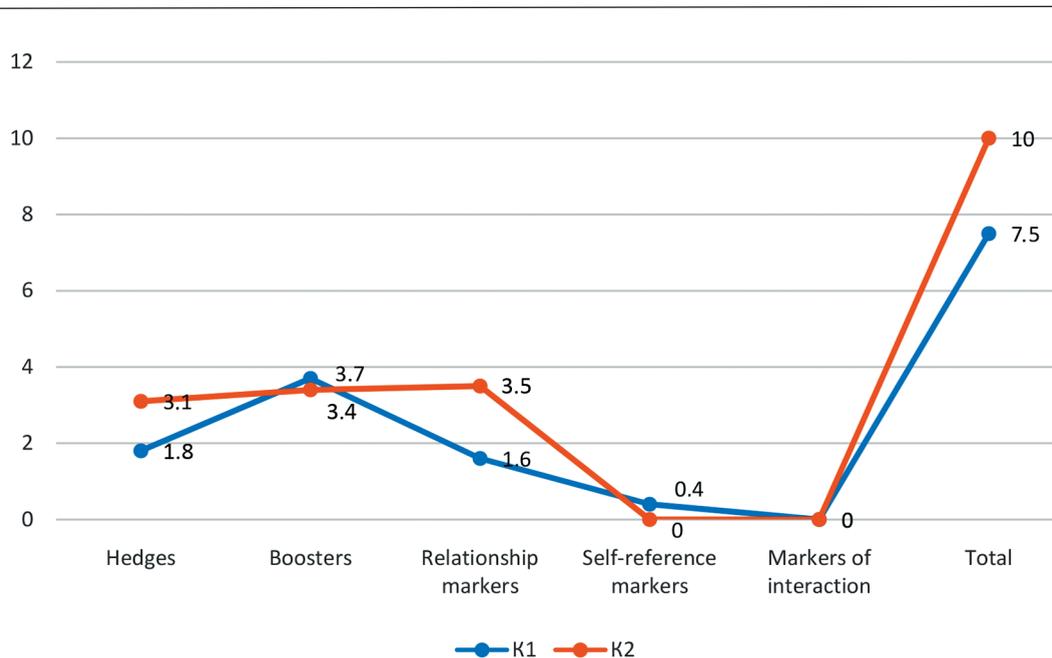
the author's assessment of its individual aspects (lexemes with semantics of significance and evaluation), *markers of self-reference* which indicate the author's presence and separate one's own position from other researchers (first-person pronouns), and *markers of interaction* which directly address the reader and activate his participation in the discourse (personal pronouns, imperatives, rhetorical and direct questions, and constructions with the semantics of shared knowledge).

A prompt with specific instructions was developed for AI:

“You are an expert in the field of technical sciences with extensive experience in writing scientific papers. Edit an abstract to a scientific article written by a student, taking into account the specifics of scientific and technical discourse (the degree of categoricity, evaluativeness, and objectivity) and the requirements of leading journals in the field of technical sciences. The following are examples of two abstracts from leading Russian engineering journals: (1) *Numerical studies of the interference of a vortex generator and a propeller wing have been carried out. The calculations were performed experimentally in a wind tunnel using a straight wing model with a pulling propeller, as well as in free flow over a wide range of angles of attack. The article shows that the installation of a vortex generator reduces the size of the separation zone, the drag of the wing, and the hinge moment of the deflected flap.* (2) *New composite materials require the binders with a unique set of properties and functions that can be processed by various technologies. Materials should be obtained using environmentally friendly and energy-efficient technologies. Binders are created based on a wide range of polymer systems, using a comprehensive assessment of the binders themselves and the materials based on them.*”

Figure 1 summarizes the results of a quantitative analysis of the meta-recursive markers in the texts of undergraduates before and after GigaChat editing using the developed tool.

AI editing had the most pronounced and statistically significant effect on the use of hedges (LL = 0.05,  $p < 0.05$ , %DIFF = 72) and relationship markers (LL = 0.08,  $p < 0.05$ , %DIFF = +119). There were minimal differences among boosters: LL = 0,  $p \approx 1$ , %DIFF = 8. Self-reference markers LL = 0.28 did not show the significant level of differences ( $p > 0.05$ , %DIFF = 100). There were no markers of interaction in both cases, which can be explained by the specific genre of abstract; abstracts give a brief presentation of the research results and do not involve the reader in a direct dialogue. Abstracts rarely use references to the reader. They are less dialogical than articles. The total number of meta-recursive markers increased from 7.5 to 10 per 1000 words, and the difference between the corpora is also significant (LL = 4.82,  $p < 0.05$ , %DIFF = +33). AI reduced the categoricity of statements and made them more impersonal and objective. At the same time, a significant increase in the number of attitude markers contributed to an increase in evaluativeness.



**Figure 1.** Normalized frequencies of metadiscursive markers before and after AI-editing  
 Source: completed by O.A. Boginskaya.

Table 1 shows the results of a metadiscursive analysis of 100 abstracts to scientific articles published in leading Russian engineering journals. We selected abstracts of at least 150 words, their authors being reputable Russian scientists with a Hirsch index of at least 10, according to elibrary. To ensure comparability of the results, the analysis was limited to abstracts of articles written by a single author.

Table 1

**Normalized frequency of metadiscursive markers in abstracts by leading Russian scientists**

Metadiscursive markers	Normalized frequency
Hedges	2.4
Boosters	4.2
Relationship markers	3.2
Self-reference markers	0
Markers of interaction	0
Total	9.8

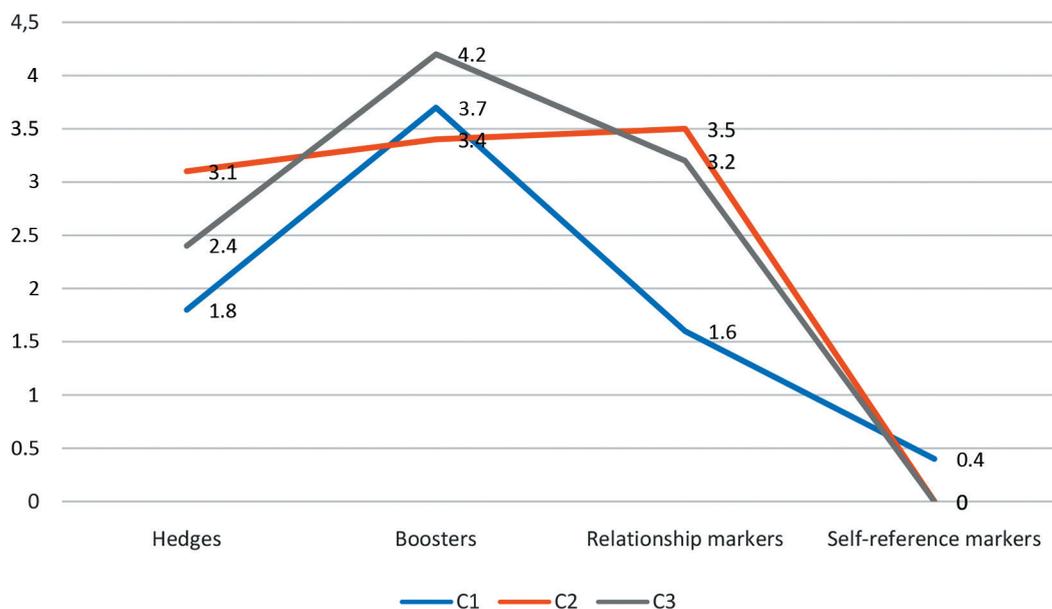
Source: completed by O.A. Boginskaya.

The analysis identified several trends. There is a higher frequency of hedges in the abstracts of reputable scientists than in the texts of undergraduates. AI editing increased the reference level by 29%; this indicates the AI’s desire to express statements with greater caution and take into account possible uncertainties or limitations of the results obtained. AI has also reduced the level of categorical statements, by 19% below the reference level. On the positive side, AI editing

increased the frequency of attitude markers, slightly exceeding the reference level +9%, while undergraduates had a deficit in assessment (–50%). The complete elimination of the author’s “I” in texts edited by AI is also consistent with the practice of leading scientists who do not use personal pronouns.

Thus, AI editing helped the texts of undergraduates reach the reference density, but the distribution of markers in C2 differs slightly from the reference one.

Figure 2 summarizes the results of a quantitative analysis of meta-recursive markers found in undergraduates’ abstracts before and after editing in GigaChat and abstracts by reputable Russian scientists.



**Figure 2.** Normalized frequencies of metadiscursive markers in C1, C2, and C3

Source: completed by O.A. Boginskaya.

As previous studies have shown, rhetorical strategies in the technical sciences are focused on factual and categorical statements, which is reflected in the frequency of boosters. However, Table 2 comparing of the undergraduate’s thesis and its version edited by AI shows that GigaChat does not always reproduce these disciplinary features.

The example shows that the undergraduate avoids using hedges to soften the categorical statements. On the contrary, the group of boosters is larger in his abstract. It includes three evidential verbs *показал* ‘showed’, *получены* ‘received’ and *подтверждают* ‘confirm’, and one deontic noun *необходимость* ‘necessity’. Relationship markers are represented by the adjectives *корректный* ‘precise’ and *надежный* ‘reliable’, and the nouns *актуальность* ‘relevance’ and *важность* ‘importance’. Markers of self-reference include one possessive pronoun *наши* ‘our’.

Example of AI editing

Abstract before AI-editing	Abstract after AI-editing
<p>Объектом исследования является разработка методов, обеспечивающих <b>корректную</b> работу устройств релейной защиты. Для решения этой проблемы ученые занимались изучением трансформаторов тока, игнорируя <b>необходимость</b> анализа работы релейной защиты. Благодаря проведенному исследованию были <b>получены</b> данные о решениях проблемы релейной защиты. Анализ <b>показал</b>, что <b>корректная</b> работа релейной защиты обеспечивается различными способами, в том числе за счет создания алгоритмов для цифровых реле, что приведет к их модернизации. Результаты, представленные в работе, <b>подчеркивают важность</b> развития и модернизации релейной защиты. <b>Наши</b> выводы <b>подтверждают актуальность</b> проблемы и <b>необходимость</b> реагирования в процессе построения алгоритмов и модернизации оборудования для гарантии <b>надежной</b> работы релейной защиты.</p>	<p>В работе исследованы <b>перспективные</b> методы обеспечения <b>корректной</b> работы устройств релейной защиты, которые сохраняют <b>актуальность</b> несмотря на <b>широкое</b> внедрение цифровых технологий. Проведен <b>детальный</b> анализ существующих решений, включая изучение трансформаторов тока и алгоритмов для цифровых реле. <b>Установлено</b>, что модернизация релейной защиты <b>требует комплексного</b> подхода, сочетающего разработку <b>новых</b> алгоритмов и обновление оборудования. Полученные результаты <b>убедительно доказывают эффективность</b> предложенных методов и <b>подтверждают необходимость</b> дальнейшего совершенствования систем защиты. <b>Представляется</b>, что разработанные решения <b>могли бы обеспечить значительное повышение</b> надежности работы устройств релейной защиты на 25 % по сравнению с традиционными методами.</p>

Source: completed by O.A. Boginskaya.

AI editing significantly increased the number of hedges: epistemic words *как представляется* ‘seem to be’, hypothetical units *могли бы* ‘could be’, alethic words *может быть достигнуто* ‘can be achieved’, unit with the meaning of uncertainty *определенные* ‘certain’. Boosters include three evidential verbs *установлено* ‘establish’, *доказывают* ‘prove’, and *подтверждают* ‘confirm’ and the verb and noun with the deontic modality *требует* ‘require’ and *необходимость* ‘necessity’. The relationship markers in the text edited by AI are represented by the noun *актуальность* ‘relevance’, the adjectives *перспективный* ‘promising’, *корректный* ‘correct’, *детальный* ‘detailed’, *комплексный* ‘complex’, *новый* ‘new’, *широкий* ‘broad’ and *значительный* ‘significant’, and the adverb *убедительно* ‘persuasive’. The self-reference marker *наши* ‘our’ was omitted. Due to depersonalization, the author’s personality was pushed into the background, reducing the level of responsibility and possible risks.

These were the result of AI intervention: hedges (2 units) appeared in the text and the number of boosters increased from 4 to 5; the number of relationship markers increased significantly, from 4 to 9, and evaluativeness increased; the self-reference marker was eliminated, which made the text more impersonal. The AI version became less categorical, but it did not violate the norms of academic writing in engineering discursive community, which admits no interpretation. The text expresses the author’s point of view categorically and

presents the research results based on empirical data rather than speculation (Boginskaya, 2024). Although the AI tried to mitigate the categorical statements with the help of two hedges, the the force of proof was retained.

Here is a comparative analysis of each group of metadiscursive markers from abstracts before and after AI editing.

*Hedges.* By their functional purpose, hedges soften the illocutionary force of argumentation and categorical statements, allow the authors to anticipate possible objections, and provide the reader with space for interpretation (Boginskaya, 2023). They play an important role in academic discourse and help to avoid the absolutization of conclusions and build a constructive dialogue between the author and readers. Here is an example.

*Результаты **показали**, что LoRa демонстрирует стабильную работу в промышленных условиях, однако модификация существующих моделей повышает точность прогнозирования. (C1)*

*Результаты **позволяют предположить**, что LoRa достаточно стабильно функционирует в промышленных условиях, однако модификация существующих моделей **может** способствовать повышению точности прогнозирования. (C2)*

An analysis of the changes shows how hedges help AI reduce the categoricity of statements. Evidential boosters *демонстрируют* ‘demonstrate’ and *показали* ‘showed’ in the undergraduate’s abstract convey the unambiguity of the conclusions. AI introduces a probability marker, a verbal phrase *позволяют предположить* ‘allow to suppose’ replaces a categorical *показали* ‘demonstrated’ and shifts the focus from unambiguity to data interpretation. The adverb *достаточно* ‘enough’ softens the assessment of the stability of LoRa and allows the author to avoid unambiguous conclusions. In the second part of the sentence, the verb *повышает* ‘increases’ is substituted with a phrase *может способствовать повышению* ‘can contribute to an increase’ and transforms an unambiguous statement about a cause-and-effect relationship into a hypothetical assumption. Thus, the edited AI version becomes less prescriptive and distinguishes between proven results and potential effects. However, the analysis of abstracts in leading Russian engineering journals show that the authors often use direct formulations in Russian-language academic discourse, especially when it comes to experimentally confirmed results. Mitigation can create the impression of unjustified uncertainty about the conclusions, which is not always appropriate, for example, when describing proven solutions.

*Boosters.* Unlike hedges, which reduce the author’s degree of epistemic confidence, boosters enhance the author’s conviction and give statements greater categoricity (Hyland, 2005). They demonstrate the author’s confidence, thereby showing agreement with his position and at the same time narrowing the dialogical space for alternative points of view. Here is an example.

*Результаты показывают, что применение пластического деформирования винтовой поверхности повышает изгибную жесткость цилиндрических компонентов, обеспечивая увеличение их сопротивления внешним нагрузкам в условиях эксплуатации.*

*Экспериментально доказано, что пластическое деформирование винтовой поверхности существенно повышает изгибную жесткость цилиндрических компонентов, значительно увеличивая их сопротивление эксплуатационным нагрузкам по сравнению с традиционными методами обработки (K2).*

Following the prompt, AI abandons the definite personal construction and makes an attempt to increase the pressure on the reader, closing the space for discussion by replacing the evidential verb *показывают* ‘show’ with a short form of the participle with a stronger evidential semantics *доказано* ‘is proved’. Assessment markers *существенно* ‘essentially’ and *значительно* ‘significantly’ increase persistence.

*Relationship markers.* Relationship markers indicate the author’s assessment of certain parameters and convey importance, doubt, surprise, or agreement with a certain point of view. Here is an example from the corpus.

*Цель работы — описать новый метод эффективного использования этиленового дёгтя и получения мезофазных пеков с текстурой в виде потоковых доменов (K1).*

*Ключевая цель данной работы — предложить новый и потенциально более эффективный метод использования этиленового дёгтя и получения мезофазных пеков с текстурой в виде потоковых доменов (K2).*

To emphasize the significance, GigaChat introduces the adjective *ключевая* ‘key’. In addition, it softens the statement by adding the hedge *потенциально* ‘potentially’, which reduces the risk of objections or doubts from the reader.

*Self-reference markers.* In order to express an epistemic or evaluative position and to interact with the reader, the authors use means which explicate their presence in the text, thereby separating their own contribution from the results of other researchers. The degree of the author’s presence is usually marked with personal and possessive pronouns of the first person singular or plural. GigaChat removed all self-reference markers from the texts written by undergraduates and made them more objective and impersonal.

*В данном исследовании мы ставим цель изучить потенциал пластического деформирования винтовой поверхности для повышения изгибной жесткости цилиндрических деталей.*

*В работе исследовано влияние пластического деформирования винтовой поверхности на изгибную жесткость цилиндрических деталей.*

The first statement from the undergraduate’s work contains an explicit marker of the author’s presence, the first-person pronoun *мы* ‘we’, which

emphasizes the active role of the author and clearly indicates the author's contribution. AI eliminates self-reference and moves from a subjective statement to a neutral description, depersonalization.

The results obtained can be used in teaching academic writing to Russian and foreign students. Analytical tasks may be offered in the classroom to teach how to critically analyze and refine texts generated or edited by AI, based on the metadiscursive norms of a scientific discipline. Here are examples of such tasks:

*1. Compare the original text written by a novice researcher and the text edited by the AI. Highlight all the changes made by the AI. What metadiscursive markers have been added or removed? Which of the changes, in your opinion, have improved the metadiscursive component of the scientific and technical text? What changes seem redundant or inappropriate?*

*2. Read the text carefully. Determine where the AI used hedges instead of boosters. Find the relationship markers. Define whether they are appropriate in this context. Please make your own changes to this text, taking into account the specifics of scientific and technical discourse.*

*3. Find 10 abstracts from peer-reviewed Russian journals on your specialty. Perform a quantitative analysis. Write out and count the number of boosters, hedges, attitude markers, and self-reference markers. Do the results of your analysis confirm the thesis of a "categorical, objective style of presentation" in the technical sciences? Give examples.*

## Conclusion

The analysis showed that GigaChat followed the developed prompts and significantly improved the metadiscursive organization of the text in accordance with the norms of academic writing in the technical sciences. Nevertheless, novice authors who use AI while writing scientific texts should critically evaluate AI products and pay attention to the style of presentation adopted in a particular field of scientific knowledge. Although AI can create coherent texts, it has certain difficulties in conveying the rhetorical aspects of scientific argumentation. The optimal use of AI in teaching academic writing is its use as an auxiliary tool combined with constant human monitoring of the text's compliance with conventions in a particular discipline.

The research opens prospects for further study of the interaction between AI and Russian-language academic discourse. It is promising to adapt language models to disciplinary norms and to develop post-editing algorithms that help authors edit AI-generated texts according to metadiscursive conventions. Since metadiscursive norms can vary depending on a narrow scientific field, it is recommended to conduct further studies with more samples and stratification by both journals and certain scientific specialties in order to form a more representative standard.

## References

- Becher, T., & Trowler, P. (2001). *Academic tribes and territories*. Buckingham: SRHE and Open University Press.
- Boginskaya, O. A. (2022). Cross-disciplinary variation in metadiscourse: A corpus-based analysis of Russian-authored research article abstracts. *Training, Language and Culture*, 6(3), 55–66. <https://doi.org/10.22363/2521-442X-2022-6-3-55-66> EDN: PWPCDQ
- Boginskaya, O. A. (2023). Russian lexical and syntactic hedges in dissertation reviews. *Russian Language Studies*, 21(1), 18–32. (In Russ.). <https://doi.org/10.22363/2618-8163-2023-21-1-18-32>. EDN: YZIACM
- Boginskaya, O. A. (2024). “It is evident that ...”: Boosting as a strategy employed to express author’s commitment to the truth of a proposition (a corpus-based analysis of research article abstracts). *Speech Genres*, 19(1), 56–65. (In Russ.). <https://doi.org/10.18500/2311-0740-2024-19-1-41-56-65> EDN: FHAZFS
- Dontcheva-Navratilova, O. (2021). Engaging with the reader in research articles in English: Variation across disciplines and linguacultural backgrounds. *English for Specific Purposes*, 63, 18–32. <https://doi.org/10.1016/j.esp.2021.02.003> EDN: AYEKNK
- Hyland, K. (2005). *Metadiscourse: exploring interaction in writing*. UK, London: A&C Black.
- Ivakhnenko, E. N., & Nikolskiy, V. S. (2023). ChatGPT in higher education and science: A threat or a valuable resource? *Vyssee obrazovanie v Rossii = Higher Education in Russia*, 32(4), 9–22. (In Russ.). <https://doi.org/10.31992/0869-3617-2023-32-4-9-22> EDN: TZHIHU
- Ivanova, L. A. (2024). Artificial intelligence in writing scientific articles — a positive or a harmful factor? *Crede Experto: Transport, Society, Education, Language*, (4). (In Russ.). [https://doi.org/10.51955/2312-1327\\_2024\\_4\\_6](https://doi.org/10.51955/2312-1327_2024_4_6) EDN: YRKWJQ
- Jiang, F., & Hyland, K. (2024). Does ChatGPT write like a student? Engagement markers in argumentative essays. *Written Communication*, 42(3), 463–492. <https://doi.org/10.1177/07410883251328311> EDN: XTUWMT
- Khedri, M., Heng, C. S., & Ebrahimi, S. F. (2013). An exploration of interactive metadiscourse markers in academic research article abstracts in two disciplines. *Discourse Studies*, 15(3), 319–331. <https://doi.org/10.1177/1461445613480588>
- Korotkina, I. B. (2018). Academic writing in Russia: The urge for interdisciplinary studies. *Vyssee obrazovanie v Rossii = Higher Education in Russia*, 27(10), 64–74. (In Russ.). <https://doi.org/10.31992/0869-3617-2018-27-10-64-74> EDN: YLVIOT
- Mo, Z., & Crosthwaite, P. (2025). Exploring the affordances of generative AI large language models for stance and engagement in academic writing. *Journal of English for Academic Purposes*, 75, Article 101499. <https://doi.org/10.1016/j.jeap.2025.101499> EDN: HZABZD
- Ou, B. K., Khuder, B., Franzetti, S., & Negretti, R. (2024). Conceptualising and cultivating critical GAI literacy in doctoral academic writing. *Journal of Second Language Writing*, 66, Article 101156. <https://doi.org/10.1016/j.jslw.2024.101156> EDN: QWTNNW
- Pecorari, D. (2023). Generative AI: same but different? *Journal of Second Language Writing*, 62, Article 101067. <https://doi.org/10.1016/J.JSLW.2023.101067>
- Rymanova, I. E. (2023). The role of artificial intelligence in developing academic writing skills. *Language. Society. Education: collection of scientific works of the 4<sup>th</sup> International Scientific Conference “Linguistic and Cultural Aspects of Modern Engineering Education”* (pp. 183–188). Tomsk: Tomsk Polytechnic University. EDN: BZSNRB
- Tikhonova, E. V., Kosycheva, M. A., & Golechkova, T. Yu. (2023). Establishing rapport with the reader: Engagement markers in the discussion section of a research article. *Integration of Education*, 27(3), 354–372. <https://doi.org/10.15507/1991-9468.112.027.202303.354-372> EDN: JXLYEP

- Utkina, T. I., & Kostareva, E. V. (2021). Features of metadiscourse use (sphere of economics, students' written texts in English). *Tomsk State University Journal of Philology*, (74), 188–207. (In Russ.). <https://doi.org/10.17223/19986645/74/11> EDN: XRSBSF
- Warschauer, M., Tseng, W., Yim, S., Webster, T., Jacob, S., Du, Q., & Tate, T. (2023). The affordances and contradictions of AI-generated text for writers of English as a second or foreign language. *Journal of Second Language Writing*, 62, Article 101071. <https://doi.org/10.1016/j.jslw.2023.101071>. EDN: WENSXW
- Xu, C. (2025). Intradisciplinary heterogeneity of academic writing: A diachronic probe into interactional metadiscourse in medical research articles. *Journal of English for Academic Purposes*, 76, Article 101541. <https://doi.org/10.1016/j.jeap.2025.101541>. EDN: EKWXQV
- Zashikhina, I. M. (2021). Academic writing: A discipline or disciplines? *Vysshee obrazovanie v Rossii = Higher Education in Russia*, 30(2), 134–143. (In Russ.). <https://doi.org/10.31992/0869-3617-2021-30-2-134-143> EDN: YVQHMI
- Zhang, M., & Zhang, J. (2025). Disciplinary variation of metadiscourse: A comparison of human-written and ChatGPT-generated English research article abstracts. *Journal of English for Academic Purposes*, 76, Article 101540. <https://doi.org/10.1016/j.jeap.2025.101540> EDN: CRAVOB

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DOI: 10.22363/2618-8163-2026-24-1-56-70

EDN: XBSBEU

Научная статья

## Трансформация метадискурсивных паттернов в русскоязычной научной речи: риторический потенциал GigaChat

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**Аннотация.** Актуальность исследования обусловлена необходимостью улучшения навыков академического письма обучающихся и трансформацией научной коммуникации под влиянием искусственного интеллекта (ИИ). Цель исследования — выявить влияние ИИ-редактирования на метадискурсивные характеристики академических текстов начинающих исследователей. Использованы методы количественного и интерпретативного анализа. Материалом исследования послужили 40 русскоязычных аннотаций, написанных магистрантами 2 курса инженерных направлений подготовки. Выявлена

динамика частотности метадискурсивных маркеров до и после обработки текстов с использованием ИИ. Результаты показали, что количество бустеров, маркеров отношения и маркеров самореференции в текстах, отредактированных *GigaChat*, в соответствии с разработанным промптом, достигло эталонного уровня, за который была принята нормализованная частотность данных метадискурсивных средств в аннотациях ведущих исследователей в области технических наук. Увеличение маркеров хеджирования выше эталонного уровня привело к смягчению категоричности высказываний. Несмотря на то, что *GigaChat* не удалось достичь эталонной частотности для всех метадискурсивных маркеров, в результате ИИ-редактирования текстов произошло значительное улучшение академического стиля и приближение к метадискурсивным канонам научно-технической коммуникации. Исследование вносит вклад в изучение трансформационных процессов научной коммуникации под влиянием ИИ, выявляя потенциал оптимизации письменной научной речи начинающих исследователей.

**Ключевые слова:** искусственный интеллект, научный текст, метадискурс, редактирование текста

**Конфликт интересов.** Автор заявляет об отсутствии конфликта интересов.

**История статьи:** поступила в редакцию 02.08.2025; принята к печати 11.11.2025.

**Для цитирования:** *Богинская О.А.* Трансформация метадискурсивных паттернов в русскоязычной научной речи: риторический потенциал *GigaChat* // Русистика. 2026. Т. 24. № 1. С. 56–70. <http://doi.org/10.22363/2618-8163-2026-24-1-56-70> EDN: XBSBEU