

## **FIZnews**

# Open data against fake science: FIZ Karlsruhe secures scientific integrity with zbMATH Open

Karlsruhe, 23 September 2025 — The recently published study on problematic publication practices has attracted international attention. The fact that the study focused on mathematics was not because our subject is particularly affected by these issues— on the contrary: practices such as paper mills, predatory journals, and citation cartels have long been widespread in many disciplines. They have become noticeable in mathematics because our community has a strong culture of quality and the necessary tools to detect manipulation. The zbMATH Open portal operated by FIZ Karlsruhe plays a key role in this.

For years, researchers around the world have been using data from zbMATH Open to uncover systematic irregularities. Employees at FIZ Karlsruhe have also initiated studies that reveal the mechanisms behind metric manipulation. In this way, we are helping to ensure that "fake science" does not remain hidden, but can be discussed transparently.

Our response to the misuse of commercial metrics such as impact factor or citation frequency is to provide independent and open infrastructures that prioritize scientific quality over quantity. With zbMATH Open, we offer free access to mathematical literature, consistently exclude questionable journals, and supplement metadata with open access and research software. This provides researchers with a reliable foundation—independent of commercial interests.

One thing is clear: appeals alone are not enough to ensure scientific integrity. Services are needed that provide guidance and implement quality standards.

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Page 1 of 2



Europe is well positioned for this: With the German service center Diamond Open Access (SeDOA), a sustainable publication model is being created that goes beyond purely commercial interests and is closely coordinated with European partners. FIZ Karlsruhe sees zbMATH Open as part of this open ecosystem—a tool for the mathematical community that makes quality visible and builds trust.

Page 2 of 2

Our position: Science remains relevant only if it is based on transparency and verified quality. With open, curated infrastructures such as zbMATH Open, we prevent manipulated metrics from determining progress.

Link: <a href="https://zbmath.org/">https://zbmath.org/</a>

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