Public Relations Initiative, Kyushu University 744 Motooka Nishi-ku Fukuoka, 819-0395 TEL: +81-92-802-2443 FAX: +81-92-802-2139 E-MAIL: sysintlkh@jimu.kyushu-u.ac.jp URL: https://www.kyushu-u.ac.jp

PRESS RELEASE (2025/9/19)

Kyushu University launches Quantum and Spacetime Research Institute

The institute will act as a catalyst for research and education, tackling the unexplored frontier of quantum and gravity, and bridging the cosmos with quantum science.

Fukuoka, Japan—On October 1, 2025, Kyushu University will launch the Quantum and Spacetime Research Institute, a new hub dedicated to researching the unexplored frontier between quantum science and space science. Bringing together researchers from inside and outside the university, the institute will foster interdisciplinary collaboration, advancing both fundamental and applied science.

The term "spacetime" symbolizes the unification of time and space, representing gravity and the universe. While quantum mechanics celebrates its 100th anniversary, the unification of gravity and quantum theory remains unresolved. The Institute will confront this challenge by pursuing the quantum–gravity crossover, while also serving as a platform to broadly connect quantum science with the universe.

"The fusion of space and quantum science holds the key to unlocking unknown physical laws and pioneering new technologies," says Professor <u>Kazuhiro Yamamoto</u> of the <u>Faculty of Science</u>. "Through research that connects to the cosmic frontier, we aim to explore humanity's future and develop discoveries and innovations that will shape it."

Comprising six divisions and a Strategic Office, the institute will unite more than 50 researchers under an "All Kyushu University" framework, supported by strong domestic and international networks.

This initiative marks the first step toward the vision proposed in the Science Council of Japan's Future Academic Advancement Initiative (2023), contributing directly to Kyushu University VISION 2030: driving social change with integrative knowledge.

A Kickoff Symposium on December 25 will discuss the institute's future prospects.

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About Kyushu University

Founded in 1911, <u>Kyushu University</u> is one of Japan's leading research-oriented institutes of higher education, consistently ranking as one of the top ten Japanese universities in the Times Higher Education World University Rankings and the QS World Rankings. The university is one of the seven national universities in Japan, located in Fukuoka, on the island of Kyushu—the most southwestern of Japan's four main islands with a population and land size slightly larger than Belgium. Kyushu U's multiple campuses—home to around 19,000 students and 8000 faculty and staff—are located around Fukuoka City, a coastal metropolis that is frequently ranked among the world's most livable cities and historically known as Japan's gateway to Asia. Through its <u>VISION 2030</u>, Kyushu U will "drive social change with integrative knowledge." By fusing the spectrum of knowledge, from the humanities and arts to engineering and medical

sciences, Kyushu U will strengthen its research in the key areas of decarbonization, medicine and health, and environment and food, to tackle society's most pressing issues.

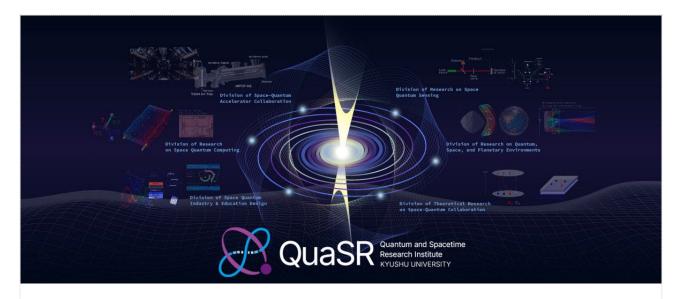


Fig. 1. The unification of gravity and quantum mechanics has remained an unsolved problem for the last 100 years since the birth of quantum mechanics. Our institute sets its goal on shedding light on this grand challenge, striving for its resolution through the fusion of diverse fields.

[Contact]

Kazuhiro Yamamoto, Professor

Faculty of Science, Department of Physics

Tel: +81-92-802-4047

E-mail: yamamoto.kazuhiro.963@m.kyushu-u.ac.jp