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Moonshot Goal 6: Realization of a fault-tolerant universal quantum computer that will revolutionize economy, industry, and security by 2050

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Biography

Dr. Masahiro Kitagawa is a Professor of Graduate School of Engineering Science <https://www.es.osaka-u.ac.jp/en/> and the director of Center for Quantum Information and Quantum Biology <https://qiqb.osaka-u.ac.jp/en/>, Osaka University. He received BEng in '81, MEng in '83, and Ph.D. in quantum physics in '94 from Osaka University. He was a research scientist at NTT Basic Research Laboratories from '83 to '93. He has been working on quantum optics and quantum information since '85. He has been a faculty member of Osaka University since '93 and a Professor since '03. He has served as Research Director of JST/CREST Projects; Nuclear Spin Network Quantum Computers ('99-05), Molecular Spin Quantum Computers ('05-11), and, Hypersensitive MRI/NMR by means of Room Temperature Hyperpolarization and Quantum Coding ('16-22). His research interest covers quantum measurement and sensing, quantum communications, quantum computing, and, quantum biology. He serves as the program director of the Moonshot Goal 6 toward fault-tolerant universal quantum computer <https://www.jst.go.jp/moonshot/en/program/goal6/>, the project leader of the Quantum Software Research Hub <http://qsrh.jp/> and a member of the quantum innovation committee of the cabinet office since '20. He is a co-founder of QunaSys Inc. <https://en.qunasys.com>, a quantum software startup, and QuEL Inc. <https://quel-inc.com>, a quantum middleware startup. His paper on "Squeezed Spin States" is selected as Physical Review A 50th Anniversary Milestones <https://journals.aps.org/pr/50th>. He is a life member of American

Physical Society and a member of Physical Society of Japan.

Abstract

Moonshot goal 6 is an ambitious and challenging program towards fault-tolerant universal quantum computer. The strategy and the portfolio of the program, and, the project managers and their projects will be introduced. The moonshot international symposium to be held next July in Tokyo will be announced.