RIKEN QUANTUM COMPUTING

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4th RQC Colloquium

From spin physics to quantum algorithms

Prof. Isaac Chuang

Massachusetts Institute of Technology

July 13, 2022(Wed) **9:00–10:00**(JST)

This colloquium will be held **ONLINE**.

Registration: https://forms.gle/bpG2etS1Qkyn796H9

https://web.mit.edu/~cua/www/quanta/

Quantum algorithms are typically perceived as being an intricate dance of many-qubit systems, especially for complex tasks such as factoring, search, and simulation. In reality, however, all three of these primordial quantum algorithms can now be understood as being instances of the quantum singular value transformation algorithm. The key to this unifying picture is single SU(2) spin physics, through which modern quantum algorithms reveal themselves as a line dance of many simultaneous Bloch spheres evolving separately in parallel.