RIKEN QUANTUM COMPUTING

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14th RQC Colloquium

Exploring fundamental physics with quantum information science

Prof. Jacob Taylor

JQI / QuICS / NIST

Jul. 7, 2023(Fri) **10:00–11:00**(JST)

This colloquium will be held in HYBRID format.

Venue: **Wako HQ 2F Large Meeting Room** @ RIKEN, and Zoom

To attend online, register at https://krs2.riken.jp/m/rqc_registration_form

Quantum technologies provide new base capabilities which open up frontiers in sensing, networking, and computation. I will discuss the promise quantum systems have in fundamental physics research, from the direct detection of dark matter to the limits of quantum memory to exploring the ability of gravity to entangle objects. I will also highlight the many challenges to be overcome and the ways in which the nascent field of quantum engineering can help tackle these challenges. In all cases, working with systems at the limits set by nature requires high degrees of integration of complex systems to realize practical results.