

The 11th PUBLIC ExU COLLOQUIUM

May 11th (Mon.) ONLINE

TALK 10:00 - 11:00 (JST)

May 10th (Sun.) 21:00 - 22:00 (EDT)

May 11th (Mon.) 1:00 - 2:00 (GMT)

ONLINE CHAT TIME
11:00 - 12:00 (JST)

Registration required (click [HERE](#))



Speaker

[Dr. Miles Stoudenmire](#)

Center for Computational Quantum Physics
Flatiron Institute

Extreme Universe, JAPAN

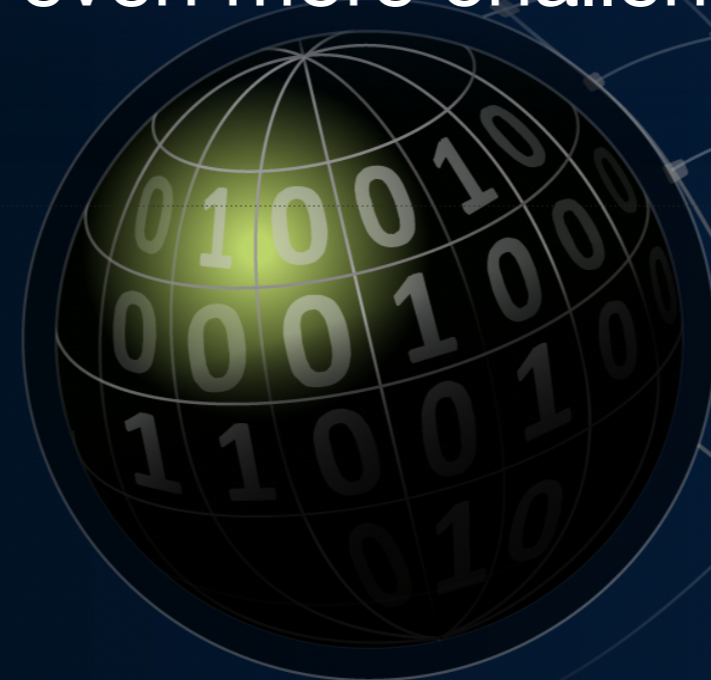


MEXT -KAKENHI- Grant-in-Aid for Transformative Research Areas (A)
The Natural Laws of Extreme Universe

Dynamics of 2D and 3D Quantum Systems with Belief Propagation

Abstract

Simulating the dynamics of strongly correlated, many-particle quantum systems is a technical challenge requiring new algorithms, flexible software, and well-chosen target problems. Belief propagation gives a natural framework for contracting 2D and 3D (and even higher-dimensional) tensor networks so that the costs can be adapted to the difficulty of the problem. I will review recent progress in pushing this method to study dynamics of quenching and annealing large quantum systems. I will conclude by discussing prospects for this method for even more challenging condensed matter systems and states of matter.



Extreme Universe 2026