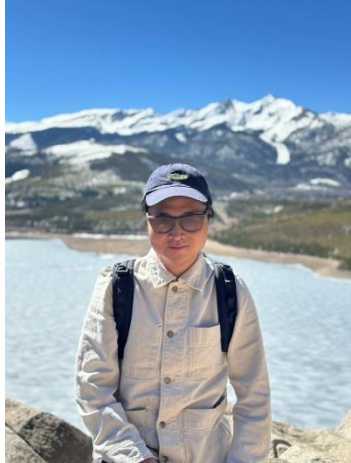




HARVARD UNIVERSITY
17 Oxford Street
Cambridge, MA 02138

Mathematical Picture Language Seminar



Friday, August 7

11:00 a.m. Boston time

Jefferson 368

Zijian Song

Stony Brook

A potential method for logical gates via anyon permutations

Abstract: We construct explicit constant-depth local unitary circuits that realize general anyon permutations in Kitaev's quantum double models. This construction admits a natural interpretation in terms of a correspondence between anyon permutation symmetries of two-dimensional topological orders and self-dualities in one-dimensional systems. This approach also provides a practical route to implementing logical gates on topological quantum codes in constant depth.

This talk will be posted two days after the seminar at

<https://mathpicture.fas.harvard.edu/seminar> and

<https://www.youtube.com/@mathematicalpicturelanguage2715/videos>