



HARVARD UNIVERSITY
17 Oxford Street
Cambridge, MA 02138

Mathematical Picture Language Seminar

Tuesday, November 2, 2021, at **9:30** a.m. EST



Zoom QR Code & Link:

<https://harvard.zoom.us/j/779283357?pwd=MitXVm1pYUIJVzZqT3lwV2pCT1ZUQTog>

Quantum algorithms for topological and geometric analysis of data

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Abstract: Quantum computers exhibit a variety of exponential enhancements over classical computers for performing linear algebraic operations. This talk reviews quantum algorithms for algebraic topology: I show how the central problem of simplicial homology can be mapped into a quantum computation, with an exponential speedup over classical algorithms. The method is particularly well adapted to topological analysis of large data sets, including financial time series analysis.

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