

HARVARD UNIVERSITY
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**Tuesday, December 8, 2020, at 10:00 (Boston)
15:00 (UK/Eire) 16:00 (C.Europe) 23:00 (China)
Mathematical Picture Language Seminar**

Zoom at: <https://harvard.zoom.us/j/779283357?pwd=MitXVm1pYUIJVzZqT3lwV2pCT1ZUQT09>

Symmetry as a shadow of topological order
Xiao-Gang Wen, MIT

Abstract: In this talk, I will present a new way to look at symmetry. We show that symmetry can be viewed as a non-invertible gravitational anomaly, and a non-invertible gravitational anomaly is classified by topological order in one higher dimension. This leads to a holographic view of symmetry: symmetry is a shadow of topological order in one higher dimension. This point of view allows us to see the duality (i.e. the equivalence) between symmetries that look very different. It also gives rise to a more general symmetry – algebraic higher symmetry, which is beyond higher group description.

