

HARVARD UNIVERSITY
17 Oxford Street
Cambridge, MA 02138



**Tuesday, [September 22, 2020](#), at 10:00 (Boston)
15:00 (UK/Eire) 16:00 (C.Europe) 22:00 (China)**
Mathematical Picture Language Seminar
Zoom at: <https://harvard.zoom.us/j/779283357>

“Triangular prism equations and categorification”
[Yunxiang Ren](#), Harvard University

Abstract: Fusion categories have been extensively studied by Mathematicians and have proved to have many important applications in quantum physics. A fusion category is completely determined by a set of F-symbols which satisfies the pentagon equations. In general, the fusion categories are constructed by different approaches and their F-symbols remain unknown. In this talk, we introduce the triangular prism equations for fusion categories and show that they are equivalent to the pentagon equations. Moreover, we provide a relevant way to manage the complexity by localization, and thus a possible approach to solve them for the F-symbols. As applications, we provided new criteria for categorification and a categorical approach to the near-group construction, improving Izumi's equations.

