Quantum Computing Seminar

Bicategories and monoidal bicategories

By

Redi Haderi
(Bilkent University)

Abstract: To study categorifications of Hilbert spaces, it is necessary to consider higher categories. In this talk we will develop the idea of bicategories and monoidal bicategories, and explain the graphical calculus which will use them. We will then discuss duality and fully dualizability in monoidal categories, and finish the talk by discussing oriented structures and oriented duals.

References:
1. Heunen, Chris, and Jamie Vicary. Categories for Quantum Theory: an introduction. Oxford University Press, 2019. Chapter 8
2. Leinster, Tom. Higher Operads, Higher Categories. Cambridge University Press, 2010. Section 1.5
3. Baez, John and Neuchl, Martin. Higher-Dimensional Algebra I: Braided Monoidal 2-Categories. arXiv:q-alg/9511013
4. Schommer-Pries, Christopher. The Classification of Two-Dimensional Extended Topological Field Theories. arXiv:1112.1000. Chapter 2.

Date: Friday, May 10, 2024
Time: 14:00
Place: SA141 - Mathematics Seminar Room & ZOOM

To request the event link, please send a message to selman.ipek@bilkent.edu.tr