MA Z X GUIDE

Functions URL

MaZX

Mathematica(R) package for the ZX-calculus. The ZX-calculus is a graphical language to describe linear maps on qubits. In several aspects, it goes beyond quantum circuit model.

This package was inspired by the MakeZXDiagram function by Janathan Gorard and Manojna Namuduri.

ZXDiagram — Constructs the ZX diagram and stores it as ZXObject

ZXObject — The object storing the ZX expression

ZXForm — Converts a quantum circuit into a ZX diagram

ZXLayers ▪ **ToZBasis** ▪ **ToXBasis**

Related Links

- R. Duncan, A. Kissinger, S. Perdrix, and J. van de Wetering, Quantum 4, 279 (2020) , "Graph–theoretic Simplification of Quantum Circuits with the ZX–calculus."
- B. Coecke and R. Duncan, New Journal of Physics 13, 043016 (2011) , "Interacting quantum observables: categorical algebra and diagrammatics."
- Janathan Gorard and Manojna Namuduri, MakeZXDiagram (2020) , in Wolfram Function Repository.