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Higher fusion categories as quantum homotopy types. Preliminary report.

Just as fusion categories can be understood as quantum versions of finite groups, representing exotic symmetries of quantum mechanical systems, higher fusion categories are quantum versions of topological spaces, or more precisely of pointed connected homotopy types. In this short talk, I will outline basic definitions and explain how the arguably most fundamental homotopical operation — the formation of higher homotopy groups — generalizes to this quantum setting and results in a sequence π_1, \dots, π_n of fusion rings associated to a fusion n -category.

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