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Integrable Models from Fusion Categories

Mathematical models of non-abelian anyons can be constructed using the data of fusion categories. In this context anyon species are labelled by objects in the category, and projectors can be constructed which describe the fusion of neighbouring anyons into a third anyon. The boost operator formalism provides a robust way to construct and classify integrable models based on fusion categories. Such models have several interesting features, including topological symmetries, non-factorisable spin-chain Hilbert spaces, and critical behaviour in the long-chain limit. In this talk I will give a pedagogical introduction to integrable models based on fusion category projectors, and survey recent results in the case of the Haagerup fusion category.

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