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# Mathematical methods for tensor networks

*Monday, 26 August 2024 11:50 (40 minutes)*

Tensor networks provide succinct representations of quantum many-body states and are an important computational tool for strongly correlated quantum systems. In two or more spatial dimensions the mathematical theory of tensor networks is complicated. In this talk I will highlight some methods and mathematical techniques used in the study of tensors and algebraic geometry, which can be applied to tensor networks. I will explain a connection to geometric invariant theory (leading to a better understanding of gauge symmetries in tensor networks) and to algebraic complexity (relating to local multipartite entanglement in tensor networks).

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