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Title: Mathematical Foundations of non-Hermitian Quantum Field Theory

Abstract: In this talk, we will explore the mathematical foundations of non-Hermitian Quantum Field Theory (QFT). We will construct non-Hermitian QFTs from first principles, going beyond existing self-consistent but post-hoc formulations of scalar and Dirac fermion field theories [1], [2]. Moreover, we deviate from the approach of analytical continuation of Hermitian Quantum Field Theories. Our new approach is valid for fields of any spin and it opens up exciting possibilities for the development of self-consistent formulations of non-Hermitian field theories.

References:

1. https://arxiv.org/abs/2006.06656.

2. https://arxiv.org/abs/2201.11061.