



19th International Conference on QCD in Extreme Conditions (XQCD 2023)

Contribution ID: 82

Type: Poster

Infrared Subtleties and Chiral Vertices at NLO: An Implicit Regularization Analysis

Wednesday, July 26, 2023 7:35 PM (25 minutes)

We employ implicit regularization (IReg) in quark-antiquark decays of the Z, or of a scalar (CP-even or odd) boson at NLO, and compare with dimensional schemes to reveal subtleties involving infrared divergence cancellation and γ_5 -matrix issues. Besides the absence of evanescent fields in IReg, such as ϵ -scalars required in certain schemes that operate partially in the physical dimension, we verify that our procedure preserves gauge invariance in the presence of the γ_5 matrix without requiring symmetry preserving counterterms while the amplitude is infrared finite as required by the KLN theorem.

Authors: Dr CHERCHIGLIA, Adriano (Instituto de Física Gleb Wataghin, Universidade Estadual de Campinas, Rua Sérgio Buarque de Holanda, 777, Campinas, SP, Brasil); Dr HILLER, Brigitte (CFisUC, Department of Physics, University of Coimbra, P-3004-516 Coimbra, Portugal); Dr SAMPAIO, Marcos (Universidade Federal do ABC, 09210-580, Santo André, Brasil); CARVALHO ROSADO, Ricardo Jorge (CFisUC, Department of Physics, University of Coimbra, P-3004-516 Coimbra, Portugal)

Presenter: CARVALHO ROSADO, Ricardo Jorge (CFisUC, Department of Physics, University of Coimbra, P-3004-516 Coimbra, Portugal)

Session Classification: Poster session