

Renormalization with non-anticommuting γ_5 applied to the SM and related theories

Thursday 18 April 2024 10:00 (30 minutes)

Chiral gauge theories such as the electroweak SM involve the γ_5 matrix which cannot be defined in dimensional regularization without breaking important properties. The rigorous t Hooft/Veltman/Breitenlohner/Maison scheme gives up anticommutativity of γ_5 . As a result, gauge invariance is broken. In our research programme we determine the required gauge-invariance restoring counterterms. Other talks will focus on progress on the multi-loop level for abelian and non-abelian generic models. This talk will focus particularly on additional difficulties arising in the Standard Model. If time permits the talk will also discuss related issues arising in non-renormalizable EFTs, Fierz identities, and renormalization group beta functions.

Primary author: STÖCKINGER, Dominik (TU Dresden)

Presenter: STÖCKINGER, Dominik (TU Dresden)

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