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Calculation of Muon Self Energy using MARTY.

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Muons are elementary particles with a finite lifetime, and their self-energy describes the interaction between a muon and the surrounding electromagnetic field. Accurate determination of the muon self-energy is essential for precision tests of the electroweak sector of the Standard Model and for probing new physics beyond the current model. In this study, we utilized the Marty program to calculate the muon self-energy at a one-loop level within the Standard Model. Our study contributes to the understanding of the muon self-energy and highlights the usefulness of Marty as a computational tool for particle physics calculations.

Keyword-1

Muon Self energy

Keyword-2

MARTY

Keyword-3

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