

PRISMA+ Colloquium

May 17, 2023 at 1 p.m.
Lorentz-Raum, 05-127, Staudingerweg 7

Dr. Vera Gülpers
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Lattice QCD+QED calculations for high-precision tests of the Standard Model

Indirect high-precision searches for possible deviations from Standard Model predictions at low energies are an important tool for finding signatures of new physics. Ab-initio theoretical predictions involving the strong nuclear force at small energies are only possible using Monte Carlo methods in a numerical approach known as Lattice QCD. In recent years lattice calculations of several quantities, such as the pion decay constant, have reached a precision of $O(1\%)$, where electromagnetic effects can no longer be neglected. In this talk Vera Gülpers will discuss how electromagnetic effects can be included in lattice calculations and present results of our recent calculation of electromagnetic corrections to leptonic pion and kaon decays.