

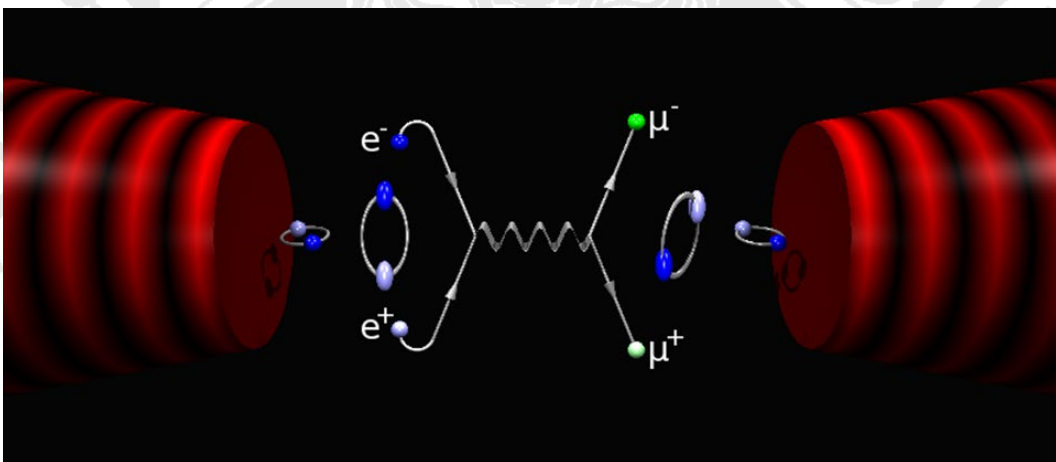
PHYSIKALISCHES KOLLOQUIUM

AM 07. NOVEMBER 2022 UM 17 UHR C.T.

IM GROßEN HÖRSAAL

AKTUELLE INFORMATIONEN FINDEN SIE HIER:

WWW.PHYSIK.UNI-FREIBURG.DE



HIGH-ENERGY QUANTUM PHYSICS WITH EXTREME LASER PULSES

CHRISTOPH KEITEL

MAX-PLANCK-INSTITUT FÜR KERNPHYSIK HEIDELBERG

The talk starts with an introduction into the strong-field QED applicable for the collision of a high-energy electron beam with an ultra-strong laser pulse. For this purpose, radiative reaction, spin dynamics and pair production are discussed. Emphasis on recent progress will be given on the generation and polarization of high-energy electron, positron and gamma-ray beams, plasma diagnostics, and tests of fundamental physics. Also, nuclear quantum control is considered and an outlook on attractive feasible experiments in the light of upcoming facilities is given.