

SONDERSEMINAR/SPECIAL SEMINAR
LMU/MPQ

am: Freitag, 28. Februar 2014

Uhrzeit: 10:00 Uhr s.t.

spricht: Dr. Paolo Crivelli
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Thema: Precision Laser Spectroscopy of 1S-2S Transition
in Positronium

Ort: Max-Planck-Institut für Quantenoptik
H.-W. Hörsaal/Großer Hörsaal
Hans-Kopfermann-Str. 1
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gez. Prof. T.W. Hänsch

ABSTRACT:

In this seminar, we report on the status of our measurement of the 1S-2S transition frequency of positronium (the electron-positron bound system). The aim of this experiment is to reach a precision of 0.5 ppb in order to cross check the bound state QED calculations.

Positronium, being a purely leptonic system, is free of hadronic corrections, and weak interaction effects are negligible at the current level of experimental uncertainty. This atom is thus a unique laboratory for testing bound-system QED.

We will also discuss the prospects of future improvements in this measurement and in the 1S-2S interval of muonium atoms (the positive muon-electron bound system).
