

University of Notre Dame
College of Science
Department of Physics

COLLOQUIUM

Quantum electrodynamics: Recent developments

Prof. Ulrich Jentschura
University of Missouri - Rolla

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(Refreshments at 3:30 p.m. NSH 202)

Quantum electrodynamics of bound states belongs to the most developed fields of theoretical physics. It is surprising how many different physical effects have to be taken into account in order to reach the current level of accuracy of theoretical predictions. Simultaneously, the theory involves both sophisticated concepts in its theoretical formulation as well as some advanced and somewhat counterintuitive, but efficient numerical methods. In this talk, I will try to give an overview of the physics involved. A few recent advances in the field, such as the theory of the hyperfine splitting and g factor, and the theory of two-photon decays in the presence of competing cascade transitions, will be highlighted. The importance of the theory for the description of practically important phenomena such as atom-surface interactions will be mentioned, and recent results in that area will be mentioned. Prospects for further advances will be discussed.

Host: Jonathan Sapirstein

ALL INTERESTED PERSONS ARE CORDIALLY INVITED TO ATTEND