LMU LUDWIG-MAXIMILIANS-UNIVERSITÄT MÜNCHEN

ARNOLD SOMMERFELD CENTER FOR THEORETICAL PHYSICS

Sommerfeld Theory Colloquium

Prof. Fabio Zwirner

University of Padova

Z' models and the early LHC

Are there plausible extensions of the Standard Model that could lead to early discoveries at the LHC? To address this general question on a concrete example, I will consider a class of minimal models with an extra massive neutral gauge boson Z'. I will first review different theoretical motivations for extending the SM gauge group with an extra U(1) factor, possibly broken near the TeV scale. I will then discuss the interplay between the bounds from electroweak precision tests and direct searches at the Tevatron, to identify the early LHC discovery potential. I will finally comment on the peculiar features of models where the Z' couples non-universally to lepton flavors and of string models with intersecting or magnetized branes.

Wednesday, 3rd February 2010, 10:30 h, Room 348 / 349, Theresienstr. 37 / III

Prof. V. Mukhanov