



Sommerfeld Theory Colloquium

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Neutrino Paradigm and Large Hadron Collider

The physics of elementary particles is governed by symmetries. A particular symmetry stands out: the one between left and right, called parity. Its breaking in beta decay created a bombshell more than fifty years ago, and ultimately led to the creation of the Standard Model of particle interactions, whose final crowning confirmation is to be provided by the Large Hadron Collider (LHC) at CERN. The Standard Model is based on the premise of parity being broken always, at all energies. I argue, on the contrary, that in nature left-right symmetry is fundamental, and that at high energies of the LHC one could actually see its restoration in full glory. I show how this would probe the nature of neutrino, through the spectacular signatures of lepton number violation.

Wednesday, 8 February 2012, 16:15h, Room A348/349, Theresienstr. 37/III