



ID de Contribution: 1

Type: **Ordinary**

SUSY confronting data: MSSM versus NMSSM

jeudi 7 mars 2013 09:30 (15 minutes)

The usual SUSY fit requirements today include direct limit on SUSY searches, relic abundance of Dark matter, direct DM searches, Higgs mass, rare decays (including $B \rightarrow \mu\mu$) and Higgs decay branching ratios. Assuming the latter ones are close to that of the SM one can fit all these requirements in the MSSM, albeit with heavy stops. The NMSSM provides much wider possibilities including varying branching ratios, but require some non-universality at the GUT scale. In this case one typically has two Higgses with the masses around 100 and 125 GeV and the third one not too heavy.

We explore both these models and define the allowed regions of parameter space both in $(m_0-m_{1/2})$ plane (MSSM, NMSSM) and in $(\lambda-\kappa)$ plane (NMSSM). For MSSM the most stringent requirement happens to be the Higgs mass, that restricts the values of $m_{1/2}$ above ~ 1000 GeV. For the NMSSM in the $(\lambda-\kappa)$ plane the applied constraints single out a small spot, while the $(m_0-m_{1/2})$ plane is almost open above $m_{1/2} > 400$ GeV. We discuss several scenario including small and large $\tan\beta$ and various possibilities for the Higgs masses.

Auteur principal: Prof. KAZAKOV, Dmitri (JINR)

Co-auteurs: Mille BESKIDT, Conny (KIT, Karlsruhe); Prof. DE BOER, Wim (KIT, Karlsruhe)

Orateur: Prof. KAZAKOV, Dmitri (JINR)

Classification de Session: Beyond the SM

Classification de thématique: Theory