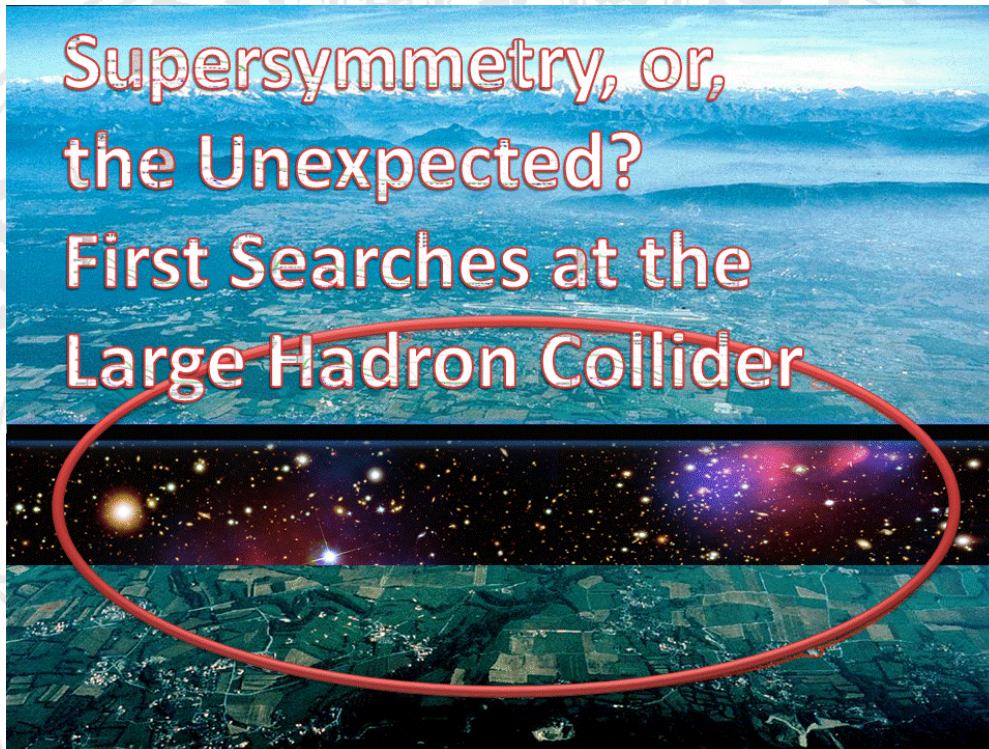


PHYSIKALISCHES KOLLOQUIUM

AM 20. JUNI 2011 UM 17 UHR C.T.

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The Standard Model describes particle interactions at the present accessible energies and is one of the great scientific achievements of the 20th century. Despite these huge achievements physicists know that the Standard Model cannot be the final theory. Several major open questions remain. These problems could be connected with the existence of the dark matter of the universe.

Theoreticians have proposed various extensions of the Standard Model to solve these problems. The popular extensions involve new interactions, new spatial dimensions or new symmetries. One of the most elegant ways to overcome many of the difficulties of the Standard Model is an extension with a new symmetry between half-integer fermions and integer spin bosons. This extension is called Supersymmetry (SUSY). Nature may, however, have chosen to behave completely differently.

This talk describes the recent search for effects of physics beyond the Standard Model with the first data of the ATLAS experiment. The exclusion limits for models like Supersymmetry are – already now- extended by large factors. The talk discusses the methods for background determination, possible model-independent search strategies, the first searches for Supersymmetry and some theoretical consequences of our results.