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Z' production in an extended MSSM

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Searching for heavy neutral gauge bosons Z' , predicted in extensions of the Standard Model based on a $U(1)'$ gauge symmetry, is among the main new physics investigations undertaken by the experiments at the Tevatron and at the Large Hadron Collider.

I will discuss study Z' phenomenology at hadron colliders according to several $U(1)'$ -based models and in the Sequential Standard Model. In particular, as far as its decay is concerned, we shall include possible Z' decays into supersymmetric particles, besides the Standard Model modes so far investigated. Results on branching ratios and cross sections will be presented, as a function of the MSSM and $U(1)'$ parameters, which will be varied within suitable ranges. Special attention will be paid to the decay into chargino, neutralino and charged-slepton pairs and gauge the feasibility to discover supersymmetry through this channel at the LHC.

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