HIGH-PRECISION DETERMINATION OF THE Z-Z' MIXING ANGLE AT THE LHC

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We consider the expected sensitivity to Z' boson effects in the $W^\pm$ boson pair production process at the Large Hadron Collider (LHC).

The results of a model-dependent analysis of Z' boson effects are presented as constraints on the Z-Z' mixing angle φ and Z' boson mass. We show that the process $pp \rightarrow W^+W^- + X$ allows to place stringent constraints on the Z-Z' mixing angle. Specifically, we find that the present LHC bounds on the mixing angle are of the order a few times 10^{-3}, what is of the same order as those derived from the electroweak data.