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## **Z' discovery potential at the LHC in the minimal B-L model**

*Friday 23 July 2010 09:45 (15 minutes)*

We present the Large Hadron Collider (LHC) discovery potential in the  $Z'$  sector of a  $U(1)_{B-L}$  *enlarged Standard Model* (that also includes three heavy Majorana neutrinos and an additional Higgs boson) for  $\sqrt{s}=7$  and 14 TeV centre-of-mass (CM) energies, considering both the  $Z'_{B-L} \rightarrow e^+e^-$  and  $Z'_{B-L} \rightarrow \mu^+\mu^-$  decay channels. The run of the LHC at  $\sqrt{s}=7$  TeV, assuming at most  $\int L \sim 1 \text{ fb}^{-1}$ , will be able to give similar results to those that will be available soon at the Tevatron in the lower mass region, and to extend them for a heavier  $M\{Z'\}$ . Finally, the run at 14 TeV is needed to fully probe the parameter space and its potential is comparable in scope to that of a future TeV scale Linear Collider (LC).

If no evidence is found in any energy configuration, 95% C.L. limits can be determined, and, given their better resolution, the limits from electrons will always be more stringent than those from muons.

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