



Contribution ID: 872

Type: Parallel Session Talk

## 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.

**Primary author:** Mr BASSO, Lorenzo (NExT Institute (University of Southampton and PPD Rutherford Appleton Laboratory-STFC))

**Co-authors:** Dr BELYAEV, Alexander (NExT Institute (University of Southampton and PPD Rutherford Appleton Laboratory-STFC)); Dr SHEPHERD-THEMISTOCLEOUS, Claire (PPD Rutherford Appleton Laboratory-STFC); Mr PRUNA, Giovanni (NExT Institute (University of Southampton and PPD Rutherford Appleton Laboratory-STFC)); Prof. MORETTI, Stefano (NExT Institute (University of Southampton and PPD Rutherford Appleton Laboratory-STFC))

**Presenter:** BASSO, Lorenzo (Rutherford Appleton Laboratory - STFC)

**Session Classification:** 10 - Beyond the Standard Model (theory and experimental searches)

**Track Classification:** 10 - Beyond the Standard Model (theory and experimental searches)