Contribution ID: **609** Type: **Parallel session talk**

Exclusion bounds for neutral gauge bosons

Saturday 20 July 2024 15:04 (17 minutes)

We study how the recent experimental results constrain the
gauge sectors of U(1) extensions of the standard model
using a novel representation of the parameter space.
We determine the bounds on the mixing angle between the massive
gauge bosons, or equivalently, the new gauge coupling as a function of
the mass $M_{Z'}$ of the new neutral gauge boson Z' in the
approximate range $(10^{-2}, 10^{4})\,\mathrm{GeV}/c^2$.
We consider the most stringent bounds obtained from direct
searches for the Z'. We also exhibit the allowed parameter
space by comparing the predicted and measured values of the
ρ parameter and those of the mass of the W boson.
Finally, we discuss the prospects of Z' searches at future colliders.
This work is presently submitted for publication, the corresponding preprint can be found at arXiv:2402.14786.

Alternate track

1. Astro-particle Physics and Cosmology

I read the instructions above

Yes

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Session Classification: Beyond the Standard Model

Track Classification: 03. Beyond the Standard Model