

Particle Physics on the Plains 2022 Part 2



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E6 Models in Light of Precision MW Measurements

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We propose a solution to the recent W mass measurement by embedding the Standard Model within E_6 models. The presence of a new $U(1)$ group shifts the W boson mass at the tree level and introduces a new gauge boson Z' which has been searched for at collider experiments. In this article, we identify the parameter space that explains the new W mass measurement and is consistent with current experimental Z' searches. As $U(1)$ extensions can be accommodated in supersymmetric models, we also consider the supersymmetric scenario of E_6 models, and show that a 125 GeV Higgs may be easily achieved in such settings.

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