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 <h2>From the Planck Scale to the Electroweak Scale</h2>

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SO(10) inspired Z' models at the LHC

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We study Z' models arising from SO(10)SO(10), focussing in particular on the gauge group of SU(3)C×SU(2)L×U(1)R×U(1)B–L, broken at the TeV scale to the Standard Model gauge group. This gauge group is well motivated from SO(10) breaking and allows neutrino mass via the linear seesaw mechanism. Assuming supersymmetry, we consider single step gauge unification to predict the gauge couplings, then consider the detection and characterisation prospects of the resulting Z' at the LHC by studying its possible decay modes into di-leptons, including the expected forward-backward asymmetry, as well as into Higgs bosons, also comparing these predictions to other related Z' scenarios such as the well studied U(1)B–L and U(1) χ models.

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