

An alternative form of supersymmetry with reduced cross-sections and modified experimental signatures

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There is a convincing case for some form of supersymmetry, but not a single superpartner has yet been observed. Here we consider a radically different form of supersymmetry, which initially combines standard Weyl fermion fields and primitive (unphysical) boson fields. A stable vacuum then requires that the initial boson fields be transformed into the usual complex fields ϕ , auxiliary fields F , and real fields φ of a new kind. A stable vacuum thus imposes Lorentz invariance and breaks the initial susy with no additional assumptions or fields. The present formulation may explain why no superpartners have yet been identified: superpartners with masses

lessim 1 TeV may exist, but with reduced cross-sections and modified experimental signatures. Predictions include (1) the dark matter candidate of our previous papers, (2) many new fermions with masses not far above 1 TeV, and (3) the full range of superpartners with a modified phenomenology.

Alternate track

1. Dark Matter Detection

I read the instructions above

Yes

Primary author: ALLEN, Roland

Presenter: ALLEN, Roland

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