

## Only 2 Supersymmetric New Particles can be Expected for a $E_8 \times U(1)$ Symmetry Cyclic Universe

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**Abstract:** For supersymmetry, many new partner matter particles are expected. But because  $E_8 \times U(1)$  is the symmetry of our universe, however, we allow only 2 more particles (250 total). These would be  $ttH$  and  $ttZ$  type fermibosonic supersymmetric entities for use in transporting mass from an earlier old universe to a newer universe without violating flatness.

Evidence of supersymmetry is expected soon with the LHC. Most physicists think large numbers of partner pairs will be found. However, according to my work with  $E_8$  symmetry for a cyclic universe, only 2 new particles and their antiparticles are permitted<sup>1</sup>: these are both of the long-sought supersymmetric character, however, ( $ttH$  spin 0 process and  $ttZ$  spin 1 process type).

Many workers in the field may conclude that supersymmetry does not exist with so few candidates and with the different way it makes itself known than is expected. The fact of its discovery and because this largely settles the case for a cycling universe without hyperinflation, however, this is tremendously important.

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