Planck 2013 <br /> <h2>From the Planck Scale to the Electroweak Scale</h2>

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## The heterotic string on magnetized orbifolds

Wednesday 22 May 2013 15:00 (25 minutes)

We give an alternative description of the Schoen manifold as the blow-up of a  $Z_2 \times Z_2$  orbifold in which one  $Z_2$  factor acts as a roto-translation. Since for this orbifold the fixed tori are only identified in pairs but not orbifolded, four-dimensional chirality can never be obtained using standard techniques alone. This situation is typical for orbifolds that have vanishing Euler number. However, chirality is recovered when its tori become magnetized. To exemplify this, we construct an SU(5) GUT on the Schoen manifold with Abelian gauge fluxes, which becomes an MSSM with three generations after an appropriate Wilson line is associated to its freely acting involution.

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