

DISCRETE 2014: Fourth Symposium on Prospects in the Physics of Discrete Symmetries



Contribution ID: 23

Type: **not specified**

Discrete symmetries in the heterotic-string landscape

Wednesday, 3 December 2014 17:40 (30 minutes)

We describe a new type of discrete symmetry that relates heterotic-string models. It is based on the spectral flow operator which is normally acting within a general $calN = (2, 2)$ model. We use this operator to construct a map between $calN = (2, 0)$ models. The landscape of $calN = (2, 0)$ models is of particular interest among all heterotic-string models for two important reasons:

1. $N = 1$ spacetime SUSY requires $(2, 0)$ superconformal invariance and
2. models with the minimal $SO(10)$ unification structure, which is well motivated by the Standard Model of particle physics data, are of this type.

This idea was inspired by a new discrete symmetry in the space of fermionic $Z_2 \times Z_2$ heterotic-string models that exchanges the spinors and vectors of the $SO(10)$ GUT group, dubbed spinor-vector duality. We will describe how to generalize this to arbitrary internal Rational Conformal Field Theories (RCFTs).

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Session Classification: Parallel 14: Discrete Symmetries in Strings and in GUT theories