

Abstract Submitted
for the APR08 Meeting of
The American Physical Society

Heterotic String Models with Perturbatively Broken Supersymmetry? GERALD CLEAVER, Baylor University, ALON FARAGGI, ELISA MANNO, CRISTINA TIMIRGAZIU, University of Liverpool — By employing our standard analysis of flat directions we present a quasi-realistic three generation free fermionic heterotic string model in which an F- and D- flat solution does not appear to exist at least to eighth order in the superpotential. Our analysis suggests that stringent flat directions may not exist to any order. Bose-Fermi degeneracy of the string spectrum implies that the one-loop partition function and hence the one-loop cosmological constant vanishes in the model. Hence this model may represent the first known example with vanishing cosmological constant and perturbatively broken supersymmetry. We discuss the distinctive properties of the internal free fermion boundary conditions that may correspond to a large set of models that share these properties.

Gerald Cleaver
Baylor University

Date submitted: 08 Jan 2008

Electronic form version 1.4