Meeting: 1003, Atlanta, Georgia, SS 30A, AMS Special Session on Analysis Problems in Modern Physics, I

1003-81-1125 **Michael R Douglas*** (mrd@physics.rutgers.edu), NHETC and Department of Physics and Astronomy, 136 Frelinghuysen Road, Piscataway, NJ 08540. *Statistical Algebraic Geometry and Superstring Theory.*

We begin with a non-technical introduction to the vacuum selection problem of string theory, and to recent work of Sujay Ashok, Frederik Denef, Bernard Shiffman, Steve Zelditch and the author which introduces and develops a statistical approach to this problem.

A prototypical problem, which we discuss in some detail, is to count "flux vacua" and find their distribution in Calabi-Yau moduli space. It turns out that methods of random algebraic geometry are the key to solving this problem. (Received October 04, 2004)