

Fundamental physics in the cosmos: The early, the large and the dark Universe



Contribution ID: 124

Type: **not specified**

Gaugino Condensation and Holomorphic BF Theory

Thursday 28 September 2017 17:05 (20 minutes)

Pure $N = 1$ supersymmetric gauge theory with a simple gauge group G is widely believed to have k massive vacua, where k is the dual Coxeter number of the Lie algebra corresponding to G . The vacua are distinguished by the phase of the gaugino condensate. The appearance of the dual Coxeter number is a hint of the role of affine Lie algebras. A holomorphic twist of pure $N = 1$ gauge theory is known to be equivalent to holomorphic BF theory. It is natural to wonder if the perturbative physics of holomorphic BF theory has any relation to the non-perturbative dynamics of the full physical theory. We study the classical spectrum of local observables in holomorphic BF theory and find that an index constructed out of the local operators can be expressed in terms of the orbits of an affine Weyl group corresponding to G . The index can also be expressed as quotients of Dedekind's eta-function and in the case of E_8 it is intricately connected with Monstrous Moonshine.

Primary author: EAGER, Richard (Univ. Heidelberg)

Presenter: EAGER, Richard (Univ. Heidelberg)

Session Classification: Parallel Session: String & Mathematical Physics

Track Classification: String & Mathematical Physics