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Séminaire commun LPTENS/LPTHE

Mardi 11 Juin 2019, 11 :30

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Domaines : hep-th

Titre : *The Bi-Fundamental Gauge Theory in 3+1 Dimensions : The Vacuum Structure and a Cascade*

Orateur : **Avner Karasik (Weizmann Institute)**

Résumé : *I will describe the results of arxiv :1904.09551. In this paper, we study the phases of the $SU(N_1) \times SU(N_2)$ gauge theory with a bi-fundamental fermion in 3+1 dimensions. We combine different limits of the parameter space with constraints that come from anomalies and global inconsistencies to construct a consistent picture for the phase diagram for the entire parameter space. In particular, when $N_1 \neq N_2$, different limits lead to distinct topologies of the phase diagram. This necessarily implies nontrivial physics at some intermediate regimes of parameter space. In the large $N_{1,2}$ limit, we argue that the topological transitions are accounted for by a (non-supersymmetric) duality cascade as one varies the parameters of the theory.*
