Institut Henri Poincaré

11 rue Pierre et Marie Curie, 75231 Paris cedex 05

String Theory in Greater Paris

Rencontres Théoriciennes

“Supergravité, théorie des cordes et théorie M”

Jeudi 20 Avril 2017, 10:00

Vasilis Niarchos

Durham

Aspects of Berry phase in QFT

Berry phase is a well-known feature of quantum mechanics. In this talk I will describe several new results about Berry phase in quantum field theory. We will see that even simple quantum field theories can exhibit non-trivial Berry phases and will discuss an explicit example in axion electrodynamics. We will also discuss a general relation between the Berry connection in conformal field theories and the connections on conformal manifolds considered previously by several authors in conformal perturbation theory. The implementation of this relation in 2d N=(2,2) and 4d N=2 superconformal field theories leads to a useful re-derivation of the tt equations. The latter have important implications on the non-perturbative structure of certain correlation functions, which I will briefly review.*

Institut Henri Poincaré, salle 314, 3ème étage