SEMPARIS – Séminaires en région parisienne

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TBA

Mercredi 22 Novembre 2017, 14 :00
IHES, Amphithéâtre Léon Motchane(Cours de l'IHES)
Domaines : hep-th

Titre : *Liouville conformal field theory and the DOZZ formula (1/4)*

Orateur : **Vincent Vargas (ENS, Paris)**

Résumé : *Liouville conformal field theory (LCFT hereafter), introduced by Polyakov in his 1981 seminal work "Quantum geometry of bosonic strings", can be seen as a random version of the theory of Riemann surfaces. LCFT appears in Polyakov's work as a 2d version of the Feynman path integral with an exponential interaction term. Since then, LCFT has emerged in a wide variety of contexts in the physics literature and in particular recently in relation with 4d supersymmetric gauge theories (via the AGT conjecture).*

A major issue in theoretical physics was to solve the theory, namely compute the correlation functions. In this direction, an intriguing formula for the three point correlations of LCFT was proposed in the middle of the 90's by Dorn-Otto and Zamolodchikov-Zamolodchikov, the celebrated DOZZ formula.

The purpose of the course is twofold (based on joint works with F. David, A. Kupiainen and R. Rhodes). First, I will present a rigorous probabilistic construction of Polyakov's path integral formulation of LCFT. The construction is based on the Gaussian Free Field. Second, I will show that the three point correlation functions of the probabilistic construction indeed satisfy the DOZZ formula. This establishes an explicit link between probability theory (or statistical physics) and the so-called conformal bootstrap approach of LCFT.
