

Random Tensors, Loop Vertex Expansion and Their Cumulants

vendredi 10 février 2023 11:00 (1 heure)

In the first part of my talk I shall present some generalities about random tensor models in relation with quantum gravity. In the second part I introduce the loop vertex expansion which is a technique of constructive field theory. In the third part I construct cumulants of a $U(N)$ vector model perturbed by a quartic term. This model has a non-trivial covariance to allow for renormalisation, but is one the simplest models one could think of, because its renormalization is limited to tadpoles. Nevertheless it requires a different technique, the multi-scale loop vertex expansion, and for cumulants it has never been done. I prove their Borel summability in a cardioid of the associated coupling constant.

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