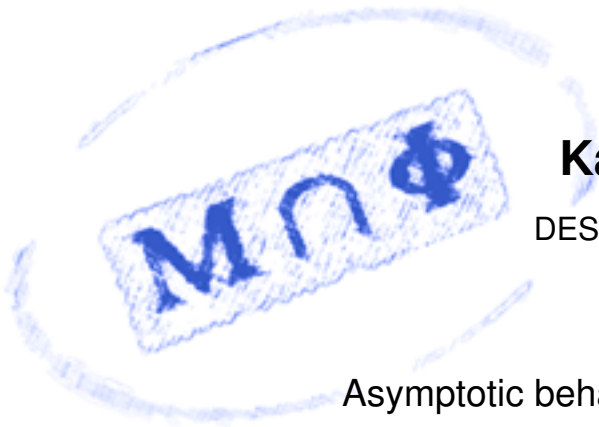


Séminaire de mathématique physique



Karol Kozlowski

DESY, Hambourg, Allemagne

Asymptotic behavior of oscillating cyclic integrals

Résumé : The oscillating cyclic integrals are $2m$ -fold integrals that appear in certain series representations for the correlation functions of Bethe Ansatz solvable models such as the one dimensional XXZ spin-1/2 chain or the non-linear Schrödinger model. These integrals depend on a large parameter m , the distance, that appears in the integral as the power of an oscillatory function of modulus one. The knowledge of the asymptotic behavior of cyclic integrals allows to obtain the long-distance asymptotics of certain correlation functions.

In this seminar, I will show how it is possible to boil down the asymptotic analysis of oscillating cyclic integrals to the one of certain quasi-decoupled multiple integrals that appear in the series expansion of the logarithm of the Fredholm determinant of the generalized sine kernel. I will then discuss the asymptotic analysis of this Fredholm determinant through Riemann–Hilbert based technique. This will allow to derive the asymptotic behavior of the cyclic integrals.

Jeudi 11 février à 16 :15 — salle A318, 3ème étage