

Introduction to Resurgence

Tuesday, November 29, 2022 9:30 AM (45 minutes)

I will explain the phenomenon of resurgence in a (apparently) new example related to Stirling formula, and its generalization to quantum dilogarithm.

Let us define rational Stirling numbers $(St_k) = (1, 1/12, 1/288, \dots)$ as coefficients in the asymptotic expansion of the normalized factorial:

$n! \sqrt{2\pi n} e^{-n} (1 + \frac{1}{12n} + \frac{1}{288n^2} + \frac{1}{51840n^3} + \dots)$ Then the asymptotic behavior of St_k for large even k is controlled by numbers St_k for small odd k , and vice versa. In the case of quantum dilogarithm, one deforms Stirling numbers to Euler polynomials.

Presenter: Prof. KONTSEVICH, Maxim (IHES)