

An asymptotic expansion for integer partitions after a local central limit theorem.

Arnaud Meyroneine

Departamento de Matemáticas, Instituto Venezolano de Investigaciones Científicas,
Caracas.

Abstract: Twenty years ago, L. Báez-Duarte derived the famous Hardy-Ramanujan's asymptotic formula for $p(n)$, which counts the number of partitions of an integer n , after a Central Limit Theorem. We propose to extend this idea to obtain an asymptotic expansion suited for approximations of $p(n)$ with arbitrary precision, for any $n \geq 1$. I will discuss some motivations outside pure mathematics, and expose the developments to date of the project. This is a joint work with Stella Brassesco from the IVIC.