



UNIVERSITÀ DI PARMA

Dipartimento di Scienze Matematiche, Fisiche ed Informatiche - DSMFI

Colloquium

David Sauzin

CNRS and Scuola Normale Superiore - Pisa

Introduction to Resurgence theory (and Alien calculus)

Abstract: Resurgence theory was developed by J.Ecalle in the 1980s to deal with divergent series originating with dynamical system problems. Based on Borel-Laplace summation, it defines a novel framework for series expansions: one is naturally led to go from series to trans-series (instantons) to measure resummation ambiguities. Resurgence was studied in mathematical problems involving differential or difference equations, but also in mathematical physics, in relation with WKB expansions and more recently string theory and quantum field theory. I'll illustrate the basic definitions and facts of resurgence theory on some examples.

Divergent series are the invention of the devil, and it is shameful to base on them any demonstration whatsoever ... That most of these things [summation of divergent series] are correct, in spite of that, is extraordinarily surprising. I am trying to find a reason for this; it is an exceedingly interesting question.



N. Abel, 1802 – 1829

Martedì 27 marzo – ore 16:30
Aula Newton – Plesso Fisico