

**Malgrange, Bernard**

**Summability of divergent series. (Sommmation des séries divergentes.)** (French) Zbl 0836.40004  
*Expo. Math.* 13, No. 2-3, 163-222 (1995).

From the author's abstract: This text deals with the two first chapters of a course given at Grenoble in the academic year 1991-92. The first chapter is devoted to the classical Borel summability; it includes the classical definition of Fourier-Laplace transform; the equivalent definition of Watson-Nevanlinna by Gevrey estimates; a definition, based on a theorem of Ramis-Sibuya, which involves only exponentially decreasing functions in sectors; and finally the more or less classical computation of Borel sums by factorial series. The second chapter is devoted to the  $k$ -summability, and mainly to the multisummability, a notion due to Ecalle which gives the possibility to resume formal power series "by a mixture of several different levels". The main interest of this notion of "multisummability" is the theorem that all formal solutions of nonlinear analytic differential equations are multisummable, a fact first proved by Braaksma.

Reviewer: B.Crstici (Timișoara)

**MSC:**

**40G99** Special methods of summability

**34E05** Asymptotic expansions of solutions to ordinary differential equations

Cited in **60** Documents

**Keywords:**

divergent series; Borel summability; Fourier-Laplace transform; Borel sums; factorial series;  $k$ -summability