

Alexander Kitaev
(Russian Academy of Sciences)
kitaev@pdmi.ras.ru

Part 1. Method of Isomonodromy Deformations as Asymptotic Analysis

Abstract: I will give a general account of application of asymptotic methods for ODEs for obtaining asymptotics and corresponding connection formulae for Painlevé equation.

Part 2. Elliptic Asymptotics of the First Painlevé Equation.

Abstract: I present the results of application of the scheme 1) for the simplest case of P1, together with the discussion of some issues around this asymptotic result, in particular the Nevanlinna characteristics.

Part 3. Special Functions of the Isomonodromy Type.

Abstract: This lecture is dedicated to discussion of application of the Painlevé equations as special functions describing asymptotics of integrable systems in transition domains, double scaling limits, etc.

Part 4. RS-Transformations, Deformation Dessings, etc.

Abstract: Here I will speak about application of the so-called RS-transformation to construction of transformations and special (algebraic) solutions for special functions of the isomonodromy type.

Part 5. Polynomials associated with the Painlevé Equations.

Abstract: Here I am going to discuss conjectures concerning properties of some polynomials that appear in the study of P6 and P3 (D7-case) Painlevé equations.