DIFFERENTIAL EQUATIONS, DYNAMICAL SYSTEMS AND APPLICATIONS (MS - ID 52)

Aspects of nonlinear differential equations

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Painlevé equations appear in many applications of mathematics and mathematical physics. In this talk I shall give an overview how recurrence coefficients of semi-classical orthogonal polynomials are related to solutions of the Painlevé equations. I shall also show how discrete systems for the recurrence coefficients are related to Bäcklund transformations of the Painlevé equations.