Consejería de Educación y Cultura
Comunidad de Madrid

Universidad Carlos III de Madrid

INTERNATIONAL WORKSHOP ON

ORTHOGONAL POLYNOMIALS IN MATHEMATICAL PHYSICS

In honour of Professor André Ronveaux.

June 24-26, 1996.

Edited by

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A three-day "International Workshop on Orthogonal Polynomials in Mathematical Physics" was hosted by Departamento de Matemáticas, Universidad Carlos III de Madrid, which took place during the past June 24-26, 1996.

A total of 74 participants engaged in friendly discussions and a pleasant atmosphere accompanied the meeting. Thirteen spanish institutions were represented by 53 people and another thirteen foreigner institutions by the rest. Each of the five invited speakers gave two one-hour lectures whose title were

- Natig Atakishiyev (Instituto de Investigaciones en Matemáticas Aplicadas y en Sistemas. Universidad Nacional Autónoma de México. Cuernavaca. México.) *Difference Equations and Some of their Solutions. Ramanujan-type Continuous Measures for Classical q-Polynomials.*
- Alexander I. Aptekarev (Keldysh Institut Russian Academy of Sciences, Moscow.) *Toda-type Dynamics for the Coefficients of Recurrence Relations.*
- Jesús S. Dehesa (Departamento de Física Moderna. Universidad de Granada, Spain.) *Information Theory, Quantum Entropy and Orthogonal Polynomials.*
- Hendrik Koelink (University of Amsterdam. The Netherlands.) *Addition Formulas for q-Special Functions. Hecke algebras and q-Krawtchouk polynomials.*
- Yuri F. Smirnov (Instituto de Física, Universidad Nacional Autónoma de México. México.) *Orthogonal polynomials of a Discrete Variable and Quantum algebras* $SU_q(2)$ *and* $SU_q(1,1)$. *Hidden* $sl(2)$ *Algebra of the Finite Difference Equations.*

The sessions were completed by thirteen half-hour communications. These short communications were delivered by

- Jorge Arvesú: *The Laguerre polynomials in a relativistic quantum-statistical model.*
- Antonio Durán: *On orthogonal matrix polynomials.*
- Federico Finkel: *Quasi Exactly Solvable Potentials on the Line and Orthogonal Polynomials.*
- Wolfgang Grawronski: *On the Zeros of Classical Orthogonal Polynomials with Large Complex Parameters.*
- Lucas Jódar: *A Matrix Formula for the Generating Function of the Product of Hermite Matrix Polynomials.*
- Roelof Koekoek: *Recent Developments in the Research of Differential Operators for Generalized (Sobolev) Orthogonal Polynomials.*
- Pierpaolo Natalini: *Some New Sets of Relativistic Orthogonal Polynomials.*
- Ramón Orive: *Rational Approximation to Certain Functions with Branch Points.*
- Franz Peherstorfer: *Periodic and quasiperiodic Toda lattices.*
- José Carlos Petronilho: *On Some Polynomial Modifications of Measures. Applications.*
- André Ronveaux: *Orthogonal Polynomials: Connection and Linearization Coefficients.*

- Jorge Sánchez-Ruiz: *Position and momentum information entropies of the harmonic oscillator and logarithmic potential of Hermite polynomials.*
- Franciszek Szafraniec: *Orthogonal polynomials in building models of the quantum harmonic oscillator.*
- Aldo Tagliani: *Entropy-convergence, Instability in Stieltjes and Hamburger Moment Problems.*

The organizing Committee was constituted by Manuel Alfaro (Universidad de Zaragoza), Renato Álvarez-Nodarse (Secretary) (Universidad Carlos III de Madrid), Antonio García García (Universidad Carlos III de Madrid), Guillermo López Lagomasino (Universidad Carlos III de Madrid and Universidad de la Habana) and Francisco Marcellán (Chairman) (Universidad Carlos III de Madrid).

All speakers were kindly invited to submit written versions of their talks for the proceedings of the meeting which we present here. The Workshop was dedicated in honour of Professor André Ronveaux on the occasion of his retirement from Facultés Universitaires Notre Dame de la Paix (Namur, Belgium) and his fruitful mathematical activities.

The calendar of the sessions was

	Monday	Tuesday	Wednesday
9:30	Smirnov	Aptekarev	Dehesa
10:30	Break	Break	Break
10:45	Koelink	Smirnov	Koelink
11:45	Break	Break	Break
12:15	Ronveaux	Koekoek	Tagliani
12:45	Natalini	Gawronski	Sánchez-Ruiz
13:15	Szafraniec	Peherstorfer	Finkel
14:00	Lunch	Lunch	Lunch
15:30	Arvesú	Orive	Petronilho
16:00	Atakishiyev	Dehesa	Duran / Jodar
17:00	Break	Break	Break
17.15	Aptekarev	Atakishiyev	Open Problems

The workshop was sponsored by Universidad Carlos III de Madrid, INTAS, Consejería de Educación y Cultura (Comunidad Autónoma de Madrid), Dirección General de Enseñanza Superior (Ministerio de Educación y Cultura of Spain). Our acknowledgement to all these institutions for their financial support.

The organizing Committee

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