INTRODUCTION

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Ambikeshwar Sharma was born in India on July 2, 1920. He was educated in Jaipur and in Lucknow where he received his Ph.D. in 1951 under A.N. Singh. Sharma held visiting research positions at Cornell, Harvard, and UCLA before joining the University of Alberta in 1962. He remained at Alberta until his retirement in 1985.

Sharma's mathematical work has been in classical analysis - mainly in lacunary interpolation and spline functions. The first deals with unique polynomial interpolation of values of a function and its (not necessarily successive) derivatives at a given set of points. Since often the interpolation at "logical" points that requires many different techniques. Sharma's papers on spline functions have been as diverse as the area itself; beginning with convergence of cubic splines, to cardinal splines, complex splines, trigonometric splines, and multivariate splines. More than 140 research papers bear the name of A. Sharma. His knowledge and feel for many problems in analysis as well as his inexhaustible enthusiasm are probably the driving force behind these articles.

His special personality, warmth, and desire to participate in research adventures are the reasons that at least 46 mathematicians have coauthored with him and befriended him for so many years. He has been a credit to mathematics, Approximation Theory, and the University of Alberta.

His good personal qualities are shared by Durga, his wife of 51 years. Many mathematicians will never forget the privilege of enjoying Durga's and Ambikeshwar's hospitality and their exceptionally delicious vegetarian table.

Sharma, we wish you many more productive years.

Introduction. This issue of the Rocky Mountain Journal of Mathematics contains papers delivered at the Constructive Function Theory-86 conference which was held at the University of Alberta in Edmonton,

Canada during the week July 22-26, 1986.

The main theme of the conference was Constructive Function Theory, an expansive title that covers the broad areas of Approximation Theory, Asymptotics, Orthogonal Polynomials, and Special Functions. The purpose of the conference was to promote the interaction of these closely related areas of classical analysis with emphasis on the development of new directions for research, emerging disciplines and the cross-fertilisation of ideas and techniques.

The conference was held by the organizers and the University of Alberta to honour our distinguished colleague Ambikeshwar Sharma. The size of the conference, 158 participants from 23 countries, reflects the respect that the mathematical community has for Professor Sharma and the goodwill he has spread among the international mathematical community.

The papers in these Proceedings were fully refereed and provide a sample of the quality of the new results contained in the over 115 talks that were presented (many speakers had commitments to publish their results elsewhere).

The organizing committee served as editors for this issue and assume responsibility for the quality and content of the Proceedings. We wish to express our gratitude to the Rocky Mountain Mathematics Consortium for the opportunity to publish the Proceedings in this Journal. It is fitting that these Proceedings should appear here since A. Sharma has served on the Editorial Board of the Rocky Mountain Journal of Mathematics since 1972.

The names of the speakers and the titles of their talks are listed below.

Main talks.

R. Askey, *Discrete versions of some known continuous facts as suggested by orthogonal polynomials.*
C. de Boor, *Algebraic aspects of quasi-interpolants.*
D. Braess, *On rational approximation, condensors and the Babylonian method.*
P. Gauthier, *Maximum principles and uniform approximation on unbounded sets in the complex domain.*
D.J. Newman, *Waring's problem revisted.*

F.W.J. Olver, *Generalized exponential and logarithmic functions.*

J. Peetre, *Rational approximation - analysis of the work of Pekarskiĭ.*

A. Sharma, *Some old and new problems and results on interpolation.*

R.S. Varga, *On two problems in analysis: Jensen's inequality and the Riemann hypothesis.*

Other talks.

D. Amir, *A note on Ikebe's criterion.*

G. Andrews, *Symbolic computation algorithms for discovery in analysis.*

R.K. Beatson, *Constrained spline interpolation.*

M.N. Benbourhim, *Representation des surfaces et variétés par les fonctions spline de type "moyennes locales".*

H. Berens, *Best approximation in matrix spaces.*

B. Bialecki, *The SINC-Nyström method for CSIE.* T. Bloom. *Multivariable polynomial interpolation and the complex Monge-Ampére equation.*

A. Boivin, *On the Banach approximation property for some uniform algebras.*

M. Bokhari, *Converse results in the theory of equiconvergence of interpolating rational functions.*

D. Borwein, *A Tauberian theorem concerning Borel-type and Cesáro methods of summability.*

P. Borwein, *Approximating π with Ramanujan's solvable modular equations.*

C. Brezinski, *Orthogonal and Stieltjes polynomials with respect to an even functional.*

M. de Bruin, *Sudden symmetry in simultaneous approximation.*

A. Cavaretta, *Convergence rates for lacunary trigonometric interpolation.*

B. Chalmers, *A variational equation for minimal norm extensions (e.g.. minimal projections).*

E.W. Cheney, *Approximation of bivariate continuous functions.*

T.S. Chihara, *On the spectra of certain birth and death processes.*

C.K. Chui. *Computation of minimal and quasi-minimal supported multivariate splines.*

S. Denko. *Fractal approximation.*

K. Dilcher. *Zeros of Bernoulli, Euler, and generalized Bernoulli polynomials.*

Z. Ditzian. *Smoothness of functions.*

E.A. van Doorn, *Representations and bounds for the greatest zero of an orthogonal polynomial.*

A. Draux. *On quasi orthogonal polynomials of order $q - 1$.*

C.B. Dunham. *The limitations of best non-linear approximation.*

R. Dwilewicz. *Some remarks on maximum type principles for solutions of PDE'S in two and three variables.*

H.G. Feichtinger. *Modulation spaces and their atomic structure.*

W.H. Fuchs. *The inverse problem of Nevanlinna theory for functions.*

D. Gaier. *On the convergence of the Bieberbach polynomials.*

G. Gasper. *Non-negativity and special functions.*

J. Geronimo. *Asymptotics of orthogonal polynomials whose recurrence relation coefficients are unbounded.*

M.V. Golitschek, *Approximation by weighted polynomials.*

H.H. Gonska. *Degree of approximation by lacunary interpolat- ors.*

Palagallo. *Near-best approximation by averaging polynomial interpolants.*

E. Passow. *Deficient Bernstein polynomials.*

F. Peherstorfer, *On Chebyshev quadrature.*

D. Pence. *Varying the knots in spline interpolation.*

V. Popov. *Non-linear approximation and interpolation spaces.*

M.J.D. Powell. *Recent results on radial basis functions.*

T.E. Price Jr., *Pointwise error estimates for interpolation.*

J.B. Prolla. *Existence of relative Chebyshev centers in $C_b(S; E)$.*

S. Révész. *Rearrangements of Fourier series of continuous functions.*

A. Ron. *Exponential box splines.*

A. Ruttan. *Real vs. complex rational approximation: upper bounds for $\lambda_{m,n}$ on the diagonal $(m, m + 2)$.*

W. Schempp, *Orthogonal polynomials and eigenmode coupling.*

K. Scherer, *On the multivariate cardinal Hermite interpolation.*

G. Schmeisser, *An extension of Laguerre's theorem to functions*

of exponential type.

H.J. Schmid. *On positive quadrature rules.*

Bl. Sendov. it The constants of H. Whitney are bounded.

R. Sharpley. *A characterization of the interpolation spaces between H^1 and $L^\times$.*

B. Shekhtman. *Duality in rational approximation.*

P.N. Shrivastava. *Lie operators and Generalised Hermite functions.*

S.P. Singh. *Approximatively compact sets and a Ky Fan theorem.*

P.W. Smith. *Experimental approaches to convexity-controlled interpolation.*hfill

K. Soni. *On a polynomial expansion of analytic functions.*

F. Stenger. *Positive operator rational approximation.*

J.J. Swetits. *Construction of best monotone approximation in L_p and l_p.*

J. Szabados. *On polynomials with positive coefficients.*

S. Takahasi. *On multipliers of Banach modules.*

W.J. Thron. *Contraction of the Schur algorithm for functions bounded in the unit disk.*

V. Totik. *Weighted polynomial approximation for analytic functions.*

A.K. Varma. *Recent results on Hermite-Birkhoff interpolation.*

G. Walz. *Approximation of special functions by asymptotic expansions and elimination procedures.*

U. Westphal. *Characterization of Cosuns in $l_p(n)$. $1 \leq p < \times$.*

E. van Wickeren. *Weak-type inequalities for Bernstein polynomials and related operators.*

P. Wingren. *Interpolating polynomials and the space $\Lambda_{k+1}(F)$.*

M.F. Wyneken. *Weak limits of zeros of orthogonal polynomials.*

R.A. Zalik. *Integral representation of weak Markov systems.*

V. Zizler. *Approximation by smooth maps in Banach spaces.*

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