

CONTENTS

Preface	III
List of Contributors and Participants	V

SURVEY ARTICLES

The Faber Operator	1
J. Milne Anderson	
Survey on Recent Advances in Inverse Problems of Padé Approximation Theory	11
G. López Lagomasino and V. V.avilov	
Some Properties and Applications of Chebyshev Polynomial and Rational Approximation	27
J. C. Mason	
Polynomial, Sinc and Rational Function Methods for Approximating Analytic Functions	49
F. Stenger	

APPROXIMATION AND INTERPOLATION THEORY

Rational Approximation of Fractals	73
M. F. Barnsley and S. G. Demko	
On Rational Approximation of the Exponential and the Square Root Function	89
D. Braess	
Padé-Type Approximants and Linear Functional Transformations ...	100
C. Brezinski and J. van Iseghem	
Continued Fraction Solution of the General Riccati Equation	109
J. S. R. Chisholm	
Order Stars, Contractivity and a Pick-Type Theorem	117
A. Iserles	
Bernstein and Markov Inequalities for Constrained Polynomials	125
M. A. Lachance	
Multivariate Interpolation	136
G. G. Lorentz and R. A. Lorentz	
The Strong Uniqueness Constant in Complex Approximation	145
T. Rivlin	
On the Minimum Moduli of Normalized Polynomials	150
S. Ruscheweyh and R. S. Varga	

BLOCK STRUCTURE

- On the Block Structure of the Laurent-Padé Table 160
 A. Bultheel

- Square Blocks and Equioscillation in the Padé, Walsh, and CF
 Tables 170
 L. N. Trefethen

CIRCUIT THEORY

- Properties of Padé Approximants to Stieltjes Series and
 Systems Theory 182
 N. K. Bose

- Degree of Rational Approximation in Digital Filter
 Realization 189
 C. K. Chui and X. C. Shen

- Applications of Schur Fractions to Digital Filtering and
 Signal Processing 210
 W. B. Jones and A. Steinhardt

CONVERGENCE THEORY

- A de Montessus Theorem for Vector Valued Rational
 Interpolants 227
 P. R. Graves-Morris and E. B. Saff

- On the Convergence of Limit Periodic Continued Fractions
 $K(a_n/1)$, where $a_n \rightarrow -1/4$ 243
 L. Jacobsen and A. Magnus

- On the Uniform Approximation of Holomorphic Functions on
 Convex Sets by Means of Interpolation Polynomials 249
 T. Kövari

- On Equiconvergence of Certain Sequences of Rational
 Interpolants 256
 E. B. Saff and A. Sharma

- Convergence and Divergence of Multipoint Padé Approximants
 of Meromorphic Functions 272
 H. Wallin

CRITICAL PHENOMENA

- Approximate Analytic Continuation Beyond the First Riemann
 Sheet 285
 G. A. Baker, Jr.

- Critical Exponents for the General Spin Ising Model Using
 the Rational Approximation Method 295
 J. L. Gammel, J. Nuttall and D. C. Power

Partial Differential Approximants and the Elucidation of Multisingularities	313
D. F. Styer and M. E. Fisher	

LOCATION OF ZEROS AND POLES

Zeros of Polynomials Generated by 4-Term Recurrence Relations	331
M. G. de Bruin	
A Lower Bound for the Number of Zeros of a Function Analytic in a Disk	346
A. Edrei	
Location of Poles of Padé Approximants to Entire Functions	354
J. Nuttall	

NUMERICAL METHODS

Approximations to e^x Arising in the Numerical Analysis of Volterra Equations	364
C. T. H. Baker	
Error Evaluation for Cubic Bessel Interpolation	376
A. P. Bien and F. Cheng	
Extended Numerical Computations on the "1/9" Conjecture in Rational Approximation Theory	383
A. J. Carpenter, A. Ruttan and R. S. Varga	
Computing with the Faber Transform	412
S. W. Ellacott and E. B. Saff	
A-Stable Methods for Second Order Differential Systems and their Relation to Padé Approximants	419
I. Gladwell and R. M. Thomas	
Shape Preserving Rational Spline Interpolation	431
J. A. Gregory	
An Application of Gaussian Elimination to Interpolation by Generalized Rational Functions	442
T. Håvie and M. J. D. Powell	
Problems in Numerical Chebyshev Approximation by Interpolating Radicals	453
B. Nelson and J. Williams	
Exponential Fitting of Restricted Rational Approximations to the Exponential Function	466
S. P. Nørsett and S. R. Trickett	
Quadrature Formulae and Moment Problems	477
W. J. Thron	

- Discrete ℓ_p Approximation by Rational Functions 489
G. A. Watson

ORTHOGONAL POLYNOMIALS

- What is Beyond Szegö's Theory of Orthogonal Polynomials? 502
A. Máté, P. Nevai and V. Totik
- Polynomials with Laguerre Weights in L^p 511
H. N. Mhaskar and E. B. Saff
- Orthogonal Polynomials for General Measures-I 524
J. Ullman