

Contents

<i>Preface</i>	v
<i>Invited lecturers at the symposium</i>	vii

PART I INVITED PAPERS

I-1 <i>Singularities of algebraic curves</i> (SHREERAM SHANKAR ABHYANKAR)	3
I-2 <i>Algebraic curve theory and the envelope diagrams</i> (SHREERAM ABHYANKAR and CLIFFORD RISK)	15
I-3 <i>Group representations on Hilbert spaces of analytic functions</i> (V. BARGMANN)	27
I-4 <i>Universal Teichmüller space</i> (LIPMAN BERS)	65
I-5 <i>Some analyticity properties implied by the two-particle structure of Green's functions in general quantum field theory</i> (JACQUES BROS)	85
I-6 <i>Consistency problems in S matrix theory</i> (RICHARD J. EDEN)	135
I-7 <i>Uniform asymptotic expansion of integrals</i> (A. ERDÉLYI)	149
I-8 <i>Analytic methods for the numerical computation of fluid flows</i> (P. R. GARABEDIAN)	169
I-9 <i>Scattering theory in general quantum mechanics</i> (J. M. JAUCH)	185

I-10	<i>Bergman's and Gilbert's operators in elasticity, electromagnetism, fluid dynamics, wave mechanics</i> (M. Z. V. KRZYWOBLOCKI)	207
I-11	<i>Self-similar flows in hydrodynamics with free surfaces</i> (A. G. MACKIE)	249
I-12	<i>Extension of analyticity domains of functions with positivity properties and axiomatic proof of superconvergence relations</i> (GILBERT MAHOUX and ANDRÉ MARTIN)	265
I-13	<i>The coherent state representation and quantum field theory</i> (F. ROHRLICH)	279
I-14	<i>On conformal invariant differential forms in shell theory</i> (I. N. VEKUA)	303
I-15	<i>Some theoretical ramifications of the intermediate problems for eigenvalues</i> (ALEXANDER WEINSTEIN)	313
I-16	<i>Superspace</i> (JOHN ARCHIBALD WHEELER)	335
I-17	<i>Homogeneous solutions of the heat equation</i> (D. V. WIDDER)	379

PART II CONTRIBUTED PAPERS

II-1	<i>Certain bilateral basic hypergeometric identities, mock theta functions and partitions</i> (R. P. AGARWAL)	401
II-2	<i>Spectral theory for the acoustic equation in an exterior domain</i> (GERALDO S. S. AVILA and THOMAS P. HAGGERTY)	403
II-3	<i>Existence of generalized solutions of quasi-linear elliptic equations in two independent variables</i> (A. K. AZIZ and R. B. KNIGHT)	405
II-4	<i>On the analytic theory of a class of singular partial differential equations</i> (DAVID COLTON)	415
II-5	<i>On the iteration of analytic mappings of several complex variables</i> (GIACOMO DELLA RICCIA)	425

II-6	<i>Rational approximations to Tricomi's Ψ function</i> (JERRY FIELDS and JET WIMP)	427
II-7	<i>The Jost function as an analytic function of the coupling constant</i> (WILLIAM M. FRANK)	435
II-8	<i>Singularities of Sturm-Liouville expansions for second order, ordinary differential equations</i> (ROBERT P. GILBERT and HENRY C. HOWARD)	443
II-9	<i>Equivalence of integral transform and series expansion representations of generalized temperatures</i> (DEBORAH TEPPER HAIMO)	453
II-10	<i>The inverse problem of the calculus of variations</i> (E. P. HAMILTON and B. E. GOODWIN)	461
II-11	<i>Properties of restrictions of a plurisubharmonic function on C^n</i> (WALTER HENGARTNER)	467
II-12	<i>Toeplitz determinants as group averages</i> (C. ITZYKSON)	469
II-13	<i>Applications of the technique of matched asymptotic expansions to various fields of mathematical physics</i> (R. P. KANWAL)	479
II-14	<i>A complex projective space and analytic Wightman functions</i> (A. C. MANOHARAN)	487
II-15	<i>On the solution of the quantum mechanical problem of three one-dimensional particles interacting with delta function potentials</i> (JAMES B. MCGUIRE)	497
II-16	<i>A group representation on a Hilbert space of analytic functions</i> (DONALD E. MYERS)	507
II-17	<i>A note on Green's matrices associated with homogeneous systems of linear partial differential equations with constant coefficients</i> (MICHAEL PAPADOPOULOS)	511
II-18	<i>Haag theorem and Lie-admissible algebras</i> (RUGGERO M. SANTILLI)	521

II-19	<i>Some theorems on the level curves of harmonic measures and applications</i> (W. J. SCHNEIDER)	531
II-20	<i>Inhomogeneous diffusion and wave equations with retarded arguments</i> (E. J. SCOTT)	535
II-21	<i>Stokes' phenomenon of a certain third order ordinary differential equation in the neighborhood of an irregular singular point</i> (T. K. PUTTA SWAMY and A. S. ADIKESAVAN).	537
II-22	<i>Meromorphic operator valued functions</i> (STANLY STEINBERG)	539
II-23	<i>On analytical methods for the numerical computation of electromagnetic scattering from arbitrary configurations of wires</i> (CLAYBORNE D. TAYLOR)	541
II-24	<i>Analytic properties of the scattering operator and improper eigenfunctions</i> (D. THOE)	545
II-25	<i>Operators generating solutions of</i> $\Delta_3 \tilde{\psi}(x, y, z) + \tilde{F}(x, y, z) \tilde{\psi}(x, y, z) = 0$ <i>and their properties</i> (BWEE LAN TJONG)	547
II-26	<i>Legendre series in potential scattering theory</i> (GILBERT WALTER)	553
II-27	<i>The Jost-Hepp theorem for analytic vectors</i> (DAVID N. WILLIAMS)	557
II-28	<i>Temperature problem with discontinuous radiation</i> (M. ZANE WILLIAMS)	561
II-29	<i>The n-body problem on a Hilbert space of analytic functions</i> (CLASINE VAN WINTER)	569