

CONTENTS

Foreword	v
Participants	vii
Scientific Program of the Conference	ix
Preface	xiii

HISTORY

IRMGARD SÜSS	
Origin of the Mathematical Research Institute Oberwolfach at the Countryseat 'Lorenzenhof'	3

INEQUALITIES OF COMBINATORICS AND NUMBER THEORY

DONALD R. SNOW	
A functional inequality arising in combinatorics	17
OLGA TAUSSKY	
Pairs of sums of three squares of integers whose product has the same property	29
MOSHE GOLDBERG AND E.G. STRAUS	
Combinatorial inequalities, matrix norms, and generalized numerical radii	37
RAYMOND REDHEFFER AND CAREY SMITH	
The case $n = 2$ of the Goldberg-Straus inequality	47

INEQUALITIES OF MATRIX THEORY AND LINEAR ALGEBRA

P.D. JOHNSON, JR., AND R.N. MOHAPATRA	
Inequalities involving infinite matrices with nonnegative entries	55
SIEGFRIED SCHAIBLE AND RICHARD W. COTTLE	
On pseudoconvex quadratic forms	81
RICHARD BELLMAN	
Some inequalities for positive definite matrices	89
MARVIN MARCUS AND IVAN FILIPPENKO	
Inequalities connecting eigenvalues and nonprincipal subdeterminants	91

INEQUALITIES OF DIFFERENTIAL AND INTEGRAL OPERATORS

PAUL R. BEESACK	
Minimum properties of eigenvalues -- elementary proofs	109

J. SZARSKI  
Infinite systems of first-order partial-differential-  
functional inequalities 121

EUGENE IJAKCS  
Inequalities for Fourier-Stieltjes transformations of  
functions of bounded variation 127

#### INEQUALITIES FOR SUMS, SERIES, AND INTEGRALS

VENCIL SKARDA  
 $l_1$ -bounds for inner products 137

S. HABER AND O. SHISHA  
On the location of the intermediate point in Taylor's  
theorem 143

J. ACZÉL AND E.F. BECKENBACH  
On Hölder's inequality 145

PAUL R. BEESACK  
On some integral inequalities of E.T. Copson 151

DIETER K. ROSS AND ARVIND MAHAJAN  
On enveloping series for some of the special functions,  
and on integral inequalities involving them 161

#### FUNCTIONAL INEQUALITIES

DOBIESZAW BRYDAK  
A generalization of theorems concerning a nonlinear  
functional inequality in a single variable 179

BOGDAN CHOCZEWSKI AND ZBIGNIEW POWAZKA  
Generalized subadditivity and convexity 185

ROMAN GER  
Homogeneity sets for Jensen-convex functions 193

#### INEQUALITIES OF APPROXIMATION THEORY

A. JAKIMOVSKI AND D.C. RUSSELL  
On an interpolation problem and spline functions 205

JÜRIG RÄTZ  
On approximately additive mappings 233

#### INEQUALITIES OF FUNCTIONAL ANALYSIS

BENNO FUCHSSTEINER AND HEINZ KÖNIG  
New versions of the Hahn-Banach theorem 255

DUMITRU GAŞPAR  
On interpolation of weak-type operators 267

F. FEHÉR	A generalized Schur-Hardy inequality on normed Köthe spaces	277
H.-H. KAIRIES	Mean values and function spaces	287

### INEQUALITIES OF OPERATOR THEORY

P.L. BUTZER	The Banach-Steinhaus theorem with rates, and applications to various branches of analysis	299
KY FAN	Harnack's inequalities for operators	333
MARIAN KWAPISZ	General inequalities and fixed-point problems	341

### GEOMETRIC AND TOPOLOGICAL INEQUALITIES

D. MIIMAN	Eine geometrische Ungleichung und ihre Anwendung	357
MARCEL BERGER AND JERRY L. KAZDAN	A Sturm-Liouville inequality with applications to an isoperimetric inequality for volume in terms of injective radius, and to Wiedersehen manifolds	367
E. F. BECKENBACH	The formulas of Weierstrass and the fundamental theorem of algebra for minimal surfaces	379
JOCHEN BECKER	Some inequalities for univalent functions with quasi-conformal extensions	411

### INEQUALITIES OF PROBABILITY AND INFORMATION THEORY

CLAUDI ALSINA	On a family of functional inequalities	419
B. SCHWEIZER AND A. SKLÁR	How to derive all $L_p$ -metrics from a single probabilistic metric	429
PETER KARDOS	On a functional inequality	435
J. ACZÉL, P. FISCHER, AND P. KARDOS	General solution of an inequality containing several unknown functions, with applications to the generalized problem of "how to keep the expert honest"	441

## REMARKS AND PROBLEMS

RICHARD BELLMAN	Why study inequalities?	449
DIETER K. ROSS	The $n$ -th partial sums of Jacobi elliptic functions	450
P.D. JOHNSON, JR., AND R.N. MOHAPATRA	Problems in the theory of infinite matrices	451
DIETER K. ROSS	The motion of a simple pendulum with uniformly shortening string length	453
H.-H. KAIRIES	Remarks concerning extensions of the gamma function	455
F. FEHÉR	A problem on normed Köthe spaces	458
R.N. MOHAPATRA	Remarks on a generalization of the Schur-Hardy inequality	459
F. FEHÉR	A note on the foregoing remarks of R.N. Mohapatra	461
JOCHEN BECKER	A problem in univalent-function theory	462
KAROL BARON	On a majorization of distances between the values of a family of functions and a fixed point	463
O. SHISHA	Area of a triangle and the product of its side lengths	465
J. ACZÉL	A minimum problem of the square	467

## INDEXES

Name Index	471
Subject Index	479