## Pacific Journal of Mathematics

E. Atencia and F. J. Martin-Reyes, The maximal ergodic Hilbert transform with	
weights	257
B. E. Blackadar, The regular representation of local affine motion groups	265
A. Dow, On F-spaces and $F'$ -spaces $\ldots$	275
Y. Kato, On the vector fields on an algebraic homogeneous space	285
D. Khavinson, Factorization theorems for different classes of analytic functions in	
multiply connected domains	295
WE. Kuan, A note on primary powers of a prime ideal	319
B. M. Mann and E. Y. Miller, Characteristic classes for spherical fibrations with	
fibre-preserving free group actions	327
S. Pax, Appropriate cross-sectionally simple four-cells are flat	379
R. K. Rai, On orthogonal completion of reduced rings	385
V. S. H. Rao, On random solutions of Volterra-Fredholm integral equations	397
T. Sato, Integral comparison theorems for relative Hardy spaces of solutions of the	
equations $\Delta u = Pu$ on a Riemann surface $\ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots \ldots$	407
<b>P.</b> Selick, A reformulation of the Arf invariant one mod $p$ problem and applications	
to atomic spaces	431
R. J. Stroeker, Reduction of elliptic curves over imaginary quadratic number fields	451
J. Towber, Natural transformations of tensor-products of representation-functors I,	
Combinatorial preliminaries	465
J. C. S. Wong and A. Riazi, Characterisations of amenable locally compact semi-	
groups	479

Subject listing on back cover

## PACIFIC JOURNAL OF MATHEMATICS

## EDITORS

DONALD BABBITT (Managing Editor) University of California Los Angeles, CA 90024

HUGO ROSSI University of Utah Salt Lake City, UT 84112

C. C. MOORE and ARTHUR OGUS University of California Berkeley, CA 94720 J. DUGUNDJI Department of Mathematics University of Southern California Los Angeles, CA 90089-1113

R. FINN and H. SAMELSON Stanford University Stanford, CA 94305

## **ASSOCIATE EDITORS**

R. Arens

E. F. BECKENBACH (1906–1982) B. H. NEUMANN

F. WOLF K. YOSHIDA

SUPPORTING INSTITUTIONS

UNIVERSITY OF ARIZONA UNIVERSITY OF BRITISH COLUMBIA CALIFORNIA INSTITUTE OF TECHNOLOGY UNIVERSITY OF CALIFORNIA MONTANA STATE UNIVERSITY UNIVERSITY OF NEVADA, RENO NEW MEXICO STATE UNIVERSITY OREGON STATE UNIVERSITY

UNIVERSITY OF OREGON UNIVERSITY OF SOUTHERN CALIFORNIA STANFORD UNIVERSITY UNIVERSITY OF HAWAII UNIVERSITY OF TOKYO UNIVERSITY OF UTAH WASHINGTON STATE UNIVERSITY UNIVERSITY OF WASHINGTON

The Supporting Institutions listed above contribute to the cost of publication of this Journal, but they are not owners or publishers and have no responsibility for its content or policies.

Mathematical papers intended for publication in the *Pacific Journal of Mathematics* should be in typed form or offset-reproduced (not dittoed), double spaced with large margins. Please do not use built up fractions in the text of the manuscript. However, you may use them in the displayed equations. Underline Greek letters in red, German in green, and script in blue. The first paragraph must be capable of being used separately as a synopsis of the entire paper. In particular it should contain no bibliographic references. Please propose a heading for the odd numbered pages of less than 35 characters. Manuscripts, in triplicate, may be sent to any one of the editors. Please classify according to the scheme of Math. Reviews, Index to Vol. 39. Supply name and address of author to whom proofs should be sent. All other communications should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California 90024.

There are page-charges associated with articles appearing in the Pacific Journal of Mathematics. These charges are expected to be paid by the author's University, Government Agency or Company. If the author or authors do not have access to such Institutional support these charges are waived. Single authors will receive 50 free reprints; joint authors will receive a total of 100 free reprints. Additional copies may be obtained at cost in multiples of 50.

The *Pacific Journal of Mathematics* is issued monthly as of January 1966. Regular subscription rate: \$132.00 a year (6 Vol., 12 issues). Special rate: \$66.00 a year to individual members of supporting institutions.

Subscriptions, orders for numbers issued in the last three calendar years, and changes of address should be sent to Pacific Journal of Mathematics, P.O. Box 969, Carmel Valley, CA 93924, U.S.A. Old back numbers obtainable from Kraus Periodicals Co., Route 100, Millwood, NY 10546.

The Pacific Journal of Mathematics ISSN 0030-8730 is published monthly by the Pacific Journal of Mathematics at P.O. Box 969, Carmel Valley, CA 93924. Application to mail at Second-class postage rates is pending at Carmel Valley, California, and additional mailing offices. Postmaster: Send address changes to Pacific Journal of Mathematics, P.O. Box 969, Carmel Valley, CA 93924.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION Copyright © 1983 by Pacific Journal of Mathematics