

# JOURNAL

## of the

# AUSTRALIAN MATHEMATICAL SOCIETY

Series A — Pure Mathematics and Statistics

Volume 44 Part 2

APRIL 1988

ANTONIO FERNANDEZ LOPEZ and EULALIA GARCIA RUS	<i>Banach algebras which are a direct sum of division algebras . . . . .</i>	143
KUNG-FU NG	<i>An inequality implicit function theorem . . . . .</i>	146
BABU RAM and SURESH KUMARI	<i>On the integral modulus of continuity of Fourier series . . . . .</i>	151
S. YAMAMURO	<i>On homomorphisms of an orthogonally decomposable Hilbert space II . . . . .</i>	159
B. DE LA ROSA and R. WIEGANDT	<i>On dual radicals and ring elements . . . . .</i>	164
T. P. SPEED and H. L. SILCOCK	<i>Cumulants and partition lattices V. Calculating generalized <math>k</math>-statistics . . . . .</i>	171
J. N. DARROCH, M. JIRINA and T. P. SPEED	<i>Sampling without replacement: approximation to the probability distribution . . . . .</i>	197
DAVID GAULD	<i>Variation of fixed-point and coincidence sets . . . . .</i>	214
FELIX LEINEN	<i>Chief series and right regular representations of finite <math>p</math>-groups . . . . .</i>	225
SALVADOR ROMAGUERA and JOSEFA MARÍN	<i>On the bitopological extension of the Bing metrization theorem . . . . .</i>	233
DAVID A. HILL	<i>Injective modules over non-Artinian serial rings . . . . .</i>	242
CARLOS R. BORGES	<i>LECs, local mixers, topological groups and special products . . . . .</i>	252
A. D. POLLINGTON	<i>The Hausdorff dimension of a set of normal numbers II . . . . .</i>	259
R. P. HUNTER	<i>Certain finitely generated compact zero dimensional semigroups . . . . .</i>	265
T. G. RAGHAVAN and I. L. REILLY	<i>Characterizations of quasi-metrizable bitopological spaces . . . . .</i>	271
BERNHARD AMBERG, SILVANA FRANCIOSI and FRANCESCO DE GIOVANNI	<i>On normal subgroups of products of nilpotent groups . . . . .</i>	275

## THE JOURNAL

The Journal of the Australian Mathematical Society began publication in 1959, and from 1975 has appeared in two series, Series A (Pure Mathematics and Statistics) and Series B (Applied Mathematics). Information about Series B may be found on the inside back cover.

### Series A, Pure Mathematics and Statistics

Submission of research papers in pure mathematics and mathematical statistics is invited. Authors intending to submit papers for publication should prepare the typescript following the instructions below, and should send two complete copies to the Editor, or to an appropriate Associate Editor (see back cover of this issue).

Two volumes of three parts each are planned for 1988. These are Volume 44 and Volume 45. The annual subscription price to non-members is A\$165.00 (US\$133.00) for 1988.

### PREPARATION OF TYPESCRIPTS

1. The author should keep a complete copy of the submitted article; the Society will not accept responsibility for any loss. Two copies of the typescript should be submitted to one of the editors.

2. Each typescript should include (i) an abstract of not more than 150 words, preferably containing no formulae, and certainly containing no complicated formulae and no references, (ii) a 1980 Mathematics subject classification (Amer. Math. Soc.); the classification scheme is described in *Mathematical Reviews*, Index to Volume 56 (1978), (iii) if the title is long, a shortened form of it, no more than forty characters in length, including spaces.

3. The article should be typed or photocopied on high quality A4 or quarto bond paper, on one side only, with at least double spacing, and with a generous margin (at least 3 cm) all around.

4. The conventions of *A manual for authors of mathematical papers* published by the American Mathematical Society should be observed. Two alternative styles for references and quotations are described below. Authors are requested to use one and only one style consistently throughout their typescript.

STYLE 1. A typical reference in the list of references would be:

T. M. Cherry (1965), "Infinite linear systems with homogeneous kernel of degree  $-1$ ", *J. Austral. Math. Soc.* 5, 129-168.

A corresponding reference in the text would be: Cherry (1965), p. 155.

STYLE 2. A typical reference in the list of references would be:

[3] L. Gröschen, "Pseudo-quasi-ergodic theorems", *J. Austral. Math. Soc.* 4 (1960), 2-3.

A corresponding reference in the text would be: Gröschen [3], or ([3], [4], [9]), or Gröschen ([2, 3]).

In either style, the list of references should be in alphabetical order of surnames of first authors.

5. Explain clearly what symbols are to be set in special typefaces (such as cursive, fraktur, script, bold) and what is required with any unusual symbols (which should wherever possible be chosen from symbols available to the printer). This is best done by supplying a separate page entitled "Notes to the Compositor" in which conventions and requirements are fully set out, and by drawing attention to particular symbols at their first appearance in the typescript. The Notes to the Compositor should include a list of all symbols and foreign letters used in the article. Be careful to distinguish between similar symbols, such as  $v, \nu, \vee, k, \kappa, K, 1, l, I, e, \phi$  (phi),  $\emptyset$  (empty set),  $\epsilon$  (epsilon),  $\in$  (membership), and so on. Normally 0 will be set as zero; if o or O is required, then show this. Distinguish between inequalities  $<$ ,  $>$  and angular brackets  $\langle$ ,  $\rangle$ .

*Journal of the Australian Mathematical Society, Series A — Pure Mathematics and Statistics*, is published bimonthly by the Australian Mathematical Society, c/-Department of Mathematics, University of Queensland, St. Lucia, Qld. 4067, Australia. Second class postage is paid at Ann Arbor, Michigan 48106. Postmaster: Send address change notices to Dr B. D. Jones, Australian Mathematical Society, c/-Department of Mathematics, University of Queensland, St. Lucia, Qld. 4067, Australia.