Pacific Journal of Mathematics

CORRECTION TO: "DIMENSION THEORY IN POWER SERIES RINGS"

DAVID E. FIELDS

Vol. 49, No. 2 June 1973

a dense subset, in the fine C^0 topology, of the set of topological imbeddings of U into l_2.

The proof of this theorem, which requires the alternative form of Theorem 1, is similar to the proof of Theorem 2 and is therefore omitted. The principal modification needed consists in allowing the maps $F_{c,r,i,j,m}$, (which are now defined on l_2 in the obvious way using (9)-(9)‴), to act now on the *left* of the imbeddings via a suitably defined infinite left composition, and where the positive integer j is not subject to the condition $j \leqq n$ of Theorem 2.

Correction to

DIMENSION THEORY IN POWER SERIES RINGS

DAVID E. FIELDS

Volume 35 (1970), 601-611

While recently answering a letter of inquiry of T. Wilhelm, I discovered an error in Corollary 4.6. The result, as originally stated, clearly requires that $P\cdot V[[X]] \subset P[[X]]$. However, if P is not branched, it is possible that $P\cdot V[[X]] = P[[X]]$; a counterexample can be obtained from Proposition A.

The following modification of Corollary 4.6 is sufficient for the proof of Theorem 4.7.

COROLLARY 4.6′. *Let V be a valuation ring having a proper prime ideal P which is branched. If P is idempotent, then there is a prime ideal Q of $V[[X]]$ which satisfies $P\cdot V[[X]] \subsetneqq Q \subset P[[X]]$.*

Proof. Since P is branched, there is a prime ideal $\bar{P}$ of V with $\bar{P} \subset P$ and such that there are no prime ideals of V properly between $\bar{P}$ and P [1; 173]. By passing to $V[[X]]/\bar{P}[[X]]$ $(\cong (V/\bar{P})[[X]])$, we may assume that P is a minimal prime ideal of V.

Since P is idempotent, PV_P is idempotent by Lemma 4.1; hence V_P is a rank one nondiscrete valuation ring. By Theorem 3.4, there is a prime ideal Q of $V_P[[X]]$ such that $(PV_P)\cdot V_P[[X]] \subsetneqq Q \subset (PV_P)[[X]]$. But then we see that $Q \subset (PV_P)[[X]] = P[[X]] \subsetneqq V[[X]]$. Hence $Q \cap V[[X]] = Q$ and Q is a prime ideal of $V[[X]]$ with $P\cdot V[[X]] \subsetneqq Q \subset P[[X]]$.

The following result is now of interest.

PROPOSITION A. *Let V be a valuation ring having a proper prime ideal P which is not branched; then $P = \bigcup_{\lambda \in \Lambda} M_\lambda$, where $\{M_\lambda\}_{\lambda \in \Lambda}$ is the collection of prime ideals of V which are properly contained in P. In this case, $P \cdot V[[X]] = P[[X]]$ if and only if (*) given any countable subcollection $\{M_{\lambda_i}\}$ of $\{M_\lambda\}$, $\bigcup_{i=1}^{\infty} M_{\lambda_i} \subset P$.*

Proof. Assuming (*), let $f(X) = \sum_{i=0}^{\infty} f_i X^i \in P[[X]]$. For each i, $f_i \in M_{\bar{\lambda}_i}$ for some $\bar{\lambda}_i \in \Lambda$. Let $p \in P$, $p \notin \bigcup_{i=0}^{\infty} M_{\bar{\lambda}_i}$; since $p \notin M_{\bar{\lambda}_i}$, it follows that $f_i \in M_{\bar{\lambda}_i} \subseteqq (p)V$ for each i and $f(X) \in (p)V[[X]] \subseteqq P \cdot V[[X]]$.

Conversely, assuming that (*) fails, let $\{M_{\lambda_i}\}_{i=1}^{\infty}$ be a countable subcollection of $\{M_\lambda\}_{\lambda \in \Lambda}$ such that $\bigcup_{i=1}^{\infty} M_{\lambda_i} = P$. By extracting a subsequence of $\{M_{\lambda_i}\}$, we may assume that $M_{\lambda_i} \subset M_{\lambda_{i+1}}$ for each i. Let $f_i \in M_{\lambda_{i+1}}$, $f_i \notin M_{\lambda_i}$ and let $f(X) = \sum_{i=1}^{\infty} f_i X^i$; then $f(X) \in P[[X]]$ but $f(X) \notin P \cdot V[[X]]$.

MARSHALL UNIVERSITY

Correction to

COHOMOLOGY OF FINITELY PRESENTED GROUPS

P. M. CURRAN

Volume 42 (1972), 615-620

In the second paragraph of the abstract, p. 615, the first sentence, "If G is generated by n elements, $\cdots$" should read "If G is a residually finite group generated by n elements, $\cdots$".

Correction to

COMMUTANTS OF SOME HAUSDORFF MATRICES

B. E. RHOADES

Volume 42 (1973), 715-719

In [2] it is shown that, for A a conservative triangle, B a matrix with finite norm commuting with A, B is triangular if and only if

(1) for each $t \in l$ and each n, $t(A - a_{nn}I) = 0$ implies t belongs to the linear span of $(e_0, e_1, \cdots, e_n)$. On page 716 of [2] it is asserted that

(2) $(U^*)^{n+1}(A - a_{nn}I)U^{n+1}$ of type M for each n is equivalent to

PACIFIC JOURNAL OF MATHEMATICS

EDITORS

RICHARD ARENS (Managing Editor)
University of California
Los Angeles, California 90024

J. DUGUNDJI*
Department of Mathematics
University of Southern California
Los Angeles, California 90007

R. A. BEAUMONT
University of Washington
Seattle, Washington 98105

D. GILBARG AND J. MILGRAM
Stanford University
Stanford, California 94305

ASSOCIATE EDITORS

E. F. BECKENBACH   B. H. NEUMANN   F. WOLF   K. YOSHIDA

SUPPORTING INSTITUTIONS

UNIVERSITY OF BRITISH COLUMBIA
CALIFORNIA INSTITUTE OF TECHNOLOGY
UNIVERSITY OF CALIFORNIA
MONTANA STATE UNIVERSITY
UNIVERSITY OF NEVADA
NEW MEXICO STATE UNIVERSITY
OREGON STATE UNIVERSITY
UNIVERSITY OF OREGON
OSAKA UNIVERSITY
UNIVERSITY OF SOUTHERN CALIFORNIA
STANFORD UNIVERSITY
UNIVERSITY OF TOKYO
UNIVERSITY OF UTAH
WASHINGTON STATE UNIVERSITY
UNIVERSITY OF WASHINGTON
* * *
AMERICAN MATHEMATICAL SOCIETY
NAVAL WEAPONS CENTER

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. Underline Greek letters in red, German in green, and script in blue. The first paragraph or two must be capable of being used separately as a synopsis of the entire paper. Items of the bibliography should not be cited there unless absolutely necessary, in which case they must be identified by author and Journal, rather than by item number. Manuscripts, in duplicate if possible, may be sent to any one of the four editors. Please classify according to the scheme of Math. Rev. Index to Vol. **39**. All other communications to the editors should be addressed to the managing editor, or Elaine Barth, University of California, Los Angeles, California, 90024.

50 reprints are provided free for each article; 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: $48.00 a year (6 Vols., 12 issues). Special rate: $24.00 a year to individual members of supporting institutions.

Subscriptions, orders for back numbers, and changes of address should be sent to Pacific Journal of Mathematics, 103 Highland Boulevard, Berkeley, California, 94708.

PUBLISHED BY PACIFIC JOURNAL OF MATHEMATICS, A NON-PROFIT CORPORATION

Printed at Kokusai Bunken Insatsusha (International Academic Printing Co., Ltd.), 270, 3-chome Totsuka-cho, Shinjuku-ku, Tokyo 160, Japan.

* C. R. DePrima California Institute of Technology, Pasadena, CA 91109, will replace J. Dugundji until August 1974.

Copyright © 1973 by
Pacific Journal of Mathematics
All Rights Reserved

Pacific Journal of Mathematics

Vol. 49, No. 2 June, 1973