

Pacific Journal of Mathematics

**ABSOLUTE EXTENSOR SPACES: A CORRECTION AND AN
ANSWER**

CARLOS R. BORGES

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This paper has a two-fold purpose: The first is to make a minor correction in the proof of a result of ours, which states that any hyperconnected space is an AE (stratifiable) and the second is to give an affirmative answer to a question of Vaughan: Does Dugundji's Extension Theorem remain valid for linearly stratifiable spaces?

1. A correction. As it stands, the proof of Theorem 4.1 of [1] is incorrect, because the function g is not well-defined. (Obviously, for each $x \in X - A$, there is some implicit order in the selection of p_{V_1}, \dots, p_{V_n} such that V_1, \dots, V_n are the only elements $V \in \mathcal{V}$ for which $p_V(x) \neq 0$. However, no explicit mention of it is made.) The proof is easily corrected however, by taking the following three steps:

1. Assign a total order " \leq " to \mathcal{V} .
2. Add to the function g the sentence "and $V_1 \leq V_2 \leq \dots \leq V_n$."
3. On page 615 of [1], replace
 - (a) "say $V_1, \dots, V_m, \dots, V_{m+k}$ " by "say W_1, \dots, W_{m+k} such that $W_1 \leq \dots \leq W_{m+k}$ ".
 - (b) " $(p_{V_1}(x), \dots, p_{V_m}(x), 0, \dots, 0) \in P_{m+k-1}$ " by

$$"(p_{W_1}(x), \dots, p_{W_{m+k}}(x)) \in P_{m+k-1}"$$
 - (c) " $t \rightarrow (h_{m+k}(f(a_{V_1}), \dots, f(a_{V_{m+k}}), t))$ " by

$$"t \rightarrow h_{m+k}(f(a_{W_1}), \dots, f(a_{W_{m+k}}), t)"$$
 - (d) " $p(y) = (p_{V_1}(y), \dots, p_{V_{m+k}}(y))$ " by

$$"p(y) = (p_{W_1}(y), \dots, p_{W_{m+k}}(y))"$$

2. An answer. Recently, Vaughan [7] asked if Dugundji's Extension Theorem (Theorem 4.1 of [6]) remains valid for linearly stratifiable spaces.¹ It turns out that the answer is affirmative and it requires little effort. Indeed, all our generalizations of Dugundji's Extension Theorem remain valid for linearly stratifiable spaces.

THEOREM 2.1. [2; Theorem 4.1], [3; Theorem 3.1], [4; Theorem

¹ A T_1 -space X is said to be linearly stratifiable provided there exists some infinite cardinal number α such that to each open $U \subset X$ one can assign a family $\{U_\beta\}_{\beta < \alpha}$ of open subsets of X such that (a) $U_\beta \subset U$ for all $\beta < \alpha$, (b) $U\{\beta \mid \beta < \alpha\} = U$, (c) $U_\beta \subset U_\gamma$ whenever $U \subset V$, (d) $U_\gamma \subset U_\beta$ whenever $\gamma < \beta < \alpha$.

5.2] and [5; Theorems 4.1 and 4.2] remain valid for linearly stratifiable spaces.

Proof. All we need do is the following two alterations in Definition 4.1 of [2] and the proof of Theorem 4.1 of [2]. (The same alterations apply to the proofs of the other results):

1. In Definition 4.1 of [7] replace the word “integer” by the word “ordinal”.

2. Replace the sentence “Note that $m(x) < \infty$ and, in fact, $m(x) < n(W, x)$ ” by the sentence “Note that $m(x) < n(W, x)$ ” on the fourth line of the proof of Theorem 4.3 of [2]. The same applies to the other proofs.

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

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Vol. 50, No. 1

September, 1974

Gail Atneosen, <i>Sierpinski curves in finite 2-complexes</i>	1
Bruce Alan Barnes, <i>Representations of B^*-algebras on Banach spaces</i>	7
George Benke, <i>On the hypergroup structure of central $\Lambda(p)$ sets</i>	19
Carlos R. Borges, <i>Absolute extensor spaces: a correction and an answer</i>	29
Tim G. Brook, <i>Local limits and tripleability</i>	31
Philip Throop Church and James Timourian, <i>Real analytic open maps</i>	37
Timothy V. Fossum, <i>The center of a simple algebra</i>	43
Richard Freiman, <i>Homeomorphisms of long circles without periodic points</i>	47
B. E. Fullbright, <i>Intersectional properties of certain families of compact convex sets</i>	57
Harvey Charles Greenwald, <i>Lipschitz spaces on the surface of the unit sphere in Euclidean n-space</i>	63
Herbert Paul Halpern, <i>Open projections and Borel structures for C^*-algebras</i>	81
Frederic Timothy Howard, <i>The numer of multinomial coefficients divisible by a fixed power of a prime</i>	99
Lawrence Stanislaus Husch, Jr. and Ping-Fun Lam, <i>Homeomorphisms of manifolds with zero-dimensional sets of nonwandering points</i>	109
Joseph Edmund Kist, <i>Two characterizations of commutative Baer rings</i>	125
Lynn McLinden, <i>An extension of Fenchel's duality theorem to saddle functions and dual minimax problems</i>	135
Leo Sario and Cecilia Wang, <i>Counterexamples in the biharmonic classification of Riemannian 2-manifolds</i>	159
Saharon Shelah, <i>The Hanf number of omitting complete types</i>	163
Richard Staum, <i>The algebra of bounded continuous functions into a nonarchimedean field</i>	169
James DeWitt Stein, <i>Some aspects of automatic continuity</i>	187
Tommy Kay Teague, <i>On the Engel margin</i>	205
John Griggs Thompson, <i>Nonsolvable finite groups all of whose local subgroups are solvable, V</i>	215
Kung-Wei Yang, <i>Isomorphisms of group extensions</i>	299