

Journal of Inequalities in Pure and Applied Mathematics

CORRECTION TO THE PAPER "BOUNDED LINEAR OPERATOR IN PROBABILISTIC NORMED SPACES"

R. SAADATI AND H. ADIBI

Institute for Applied Mathematics Studies
1, 4th Fajr, Amol 46176-54553, Iran
EMail: rsaadati@eml.cc

Department of Mathematics and Computer Science
Amirkabir University of Technology
424 Hafez Avenue, Tehran 15914, Iran
EMail: adibih@aut.ac.ir

©2000 Victoria University
ISSN (electronic): 1443-5756
217-04



volume 6, issue 4, article 108,
2005.

*Received 16 November, 2004;
accepted 25 August, 2005.*

Communicated by: S.S. Dragomir

[Abstract](#)

[Contents](#)



[Home Page](#)

[Go Back](#)

[Close](#)

[Quit](#)

Abstract

We show that Theorem 2.4 of a recent paper by I.H. Jebril and R.I.M. Ali is incorrect.

2000 Mathematics Subject Classification: 54E70, 46S40

Key words: Probabilistic normed spaces; Bounded linear operator; Counterexample.

The authors would like to thank the referees for giving useful comments and suggestions for the improvement of this paper.

The purpose of this note is to show, by means of an appropriate counterexample, that Theorem 2.4 of the recent paper [2] is incorrect.

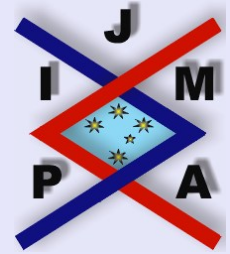
In [2], a linear operator T from the PN space (V, ν, τ, τ^*) to the PN space $(V, \mu, \sigma, \sigma^*)$ is said to be strongly B -bounded if there exists a constant $h > 0$ such that, for every $p \in V$ and for every $x > 0$,

$$\mu_{Tp}(hx) \geq \nu_p(x)$$

and, similarly, T is said to be strongly C -bounded if there exists a constant $h \in (0, 1)$ such that, for every $p \in V$ and for every $x > 0$,

$$\nu_p(x) > 1 - x \implies \mu_{Tp}(hx) > 1 - hx.$$

Theorem 2.4 of [2] asserts that if T is strongly B -bounded and μ_{Tp} is strictly increasing on $[0, 1]$, then T is strongly C -bounded. To show that this is not so,



Correction to the paper
"Bounded Linear Operator in
Probabilistic Normed Spaces"

R. Saadati and H. Adibi

Title Page

Contents



Go Back

Close

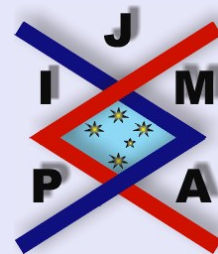
Quit

Page 2 of 4

consider the simple PN space generated by the real line \mathbb{R} with its usual norm and the distribution function G given by $G(x) = x/(1+x)$, so that for any p in \mathbb{R} and any $x \geq 0$, $\nu_p(x) = x/(x+|p|)$. This space is a Menger space under \mathbf{M} and therefore a PN space in the sense of Šerstnev [1]. Now let $T : \mathbb{R} \rightarrow \mathbb{R}$ be the linear map defined by $Tp = 2p$ and note that ν_{2p} is strictly increasing on $[0, 1]$. Then if $h > 2$,

$$\nu_{Tp}(hx) = \frac{hx}{hx + 2|p|} \geq \frac{hx}{hx + h|p|} = \nu_p(x),$$

whence T is strongly B -bounded. (Note that this holds in any simple PN space.) But for $x = 1/2$ and $p = 1/4$, we have $\nu_p(x) = 2/3 > 1/2 = 1 - x$, whereas, for any h in $(0, 1)$, $\nu_{2p}(hx) = h/(1+h) < 1 - h/2 = 1 - hx$, so that T is not strongly C -bounded.



**Correction to the paper
"Bounded Linear Operator in
Probabilistic Normed Spaces"**

R. Saadati and H. Adibi

Title Page

Contents



Go Back

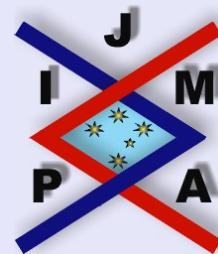
Close

Quit

Page 3 of 4

References

- [1] C. ALSINA, B. SCHWEIZER AND A. SKLAR, On the definition of a probabilistic normed space, *Aequationes Math.*, **46** (1993) 91–98.
- [2] I.H. JEBRIL AND R.M. ALI, Bounded linear operator in probabilistic normed spaces, *J. Inequal. Pure Appl. Math.*, **4**(1) (2003), Art. 8. [ONLINE: <http://jipam.vu.edu.au/article.php?sid=244>]



**Correction to the paper
"Bounded Linear Operator in
Probabilistic Normed Spaces"**

R. Saadati and H. Adibi

Title Page

Contents



Go Back

Close

Quit

Page 4 of 4