

Referee's report on the paper entitled
Banach space X -valued bilateral sequence space $\ell(\mathbb{Z}, X, \bar{\lambda}, \bar{p})$
 by
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The authors of the present paper introduce the sequence space $\ell(\mathbb{Z}, X, \bar{\lambda}, \bar{p})$ defined by

$$\ell(\mathbb{Z}, X, \bar{\lambda}, \bar{p}) = \left\{ \bar{x} = (x_k)_{-\infty}^{\infty} : x_k \in X, k \in \mathbb{Z}, \left(\sum_{-\infty}^{\infty} \|\lambda_k x_k\|^{p_k} \right) < \infty \right\},$$

where X denotes a Banach space, $\bar{\lambda} = (\lambda_k)_{-\infty}^{\infty}$ and $\bar{p} = (p_k)_{-\infty}^{\infty}$ denote a bilateral sequence of strictly positive reals and a bilateral sequence of non-zero complex numbers, respectively. It is interesting that the space $\ell(\mathbb{Z}, X, \bar{\lambda}, \bar{p})$ is reduced to the Maddox's paranormed space $\ell(p)$ if $\mathbb{Z}$, X , $\bar{\lambda} = (\lambda_k)_{-\infty}^{\infty}$ and $\bar{p} = (p_k)_{-\infty}^{\infty}$ are replaced by $\mathbb{N}$, $\mathbb{C}$, $\bar{\lambda} = e = (1, 1, 1, \dots)$ and $\bar{p} = (p_k)_0^{\infty}$, (see [I.J. Maddox, *Spaces of strongly summable sequences*, Quart. J. Math. Oxford (2) **18**(1967), 345–355]).

The paper needs a revision with respect to the following comments:

- 1) Page 2, line 9: The statement "... is to investigate results concerning the ..." must be corrected as "... is to investigate the results concerning the ..."
- 2) Page 3, lines 25 and 26, and page 4, line 1: The statement "Let for $z \in X$ with $\|z\| = 1$ and define $\bar{x} = (x_k)_{-\infty}^{\infty}$ by

$$x_k = \begin{cases} \mu_{k(n)}^{-1} n^{-r_{k(n)}} z, & \text{if } k = k(n), n \geq 1 \text{ and } \\ \theta, & \text{otherwise.} \end{cases}$$

must be restated as "Let $z \in X$ with $\|z\| = 1$ and consider the sequence $\bar{x} = (x_k)_{-\infty}^{\infty}$ defined in the proof of Lemma 2.1."

- 3) Page 4, line 5: The statement "Similarly the other cases can be disposed of." has no meaning and so must be deleted.
- 4) In list of references, AMS Abbreviations must be used. For example, "Memoirs, Amer. Math. Soc." and "Indian J. Pure and Applied Math." may be abbreviated as "Mem. Amer. Math. Soc." and "Indian J. Pure Appl. Math.", respectively.

In my opinion the main results of the present paper are new and the proofs are correct. So, I recommend it for publication in the *British Journal of Mathematics & Computer Science* if the authors revise the paper in the light of our suggestions, above.

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