Ergod. Th. & Dynam. Sys. (2009), **29**, 1993–1994
doi:10.1017/S0143385709000959

ERRATUM

Frequently hypercyclic operators and vectors – ERRATUM

A. BONILLA and K.-G. GROSSE-ERDMANN

doi:10.1017/S014338570600085X, Published by Cambridge University Press, 9 March 2007.

We correct the Frequent Universality Criterion given in [**1**].

There is an inconsistency between the conditions of the Frequent Universality Criterion, see [**1**, Theorem 2.4], and its proof. In fact, in the proof we use implicitly another condition than condition (i) as stated in our paper. The correct theorem should read as follows.

THEOREM 2.4. (Frequent Universality Criterion) *Let X be an F-space, Y a separable F-space and $T_n : X \to Y$, $n \in \mathbb{N}$, operators. Suppose that there are a dense subset Y_0 of Y and mappings $S_n : Y_0 \to X$, $n \in \mathbb{N}$, such that, for all $y \in Y_0$, the following hold.*

(i) $\sum_{n=1}^{k} T_k S_{k-n} y$ *converges unconditionally in Y, uniformly in $k \in \mathbb{N}$.*
(ii) $\sum_{n=1}^{\infty} T_k S_{k+n} y$ *converges unconditionally in Y, uniformly in $k \in \mathbb{N}$.*
(iii) $\sum_{n=1}^{\infty} S_n y$ *converges unconditionally in X.*
(iv) $T_n S_n y \to y$.

Then the sequence (T_n) is frequently universal.

For the notion of uniform unconditional convergence we refer to the definition given in our paper. In condition (i) we only have finite series, but one may understand them as infinite series by adding zero terms.

In the proof we need only correct the derivation of inequality (12). First, inequality (1) will now read as follows:

$$\left\| \sum_{n \in F} T_k S_{k-n} y_\lambda \right\| \le \frac{1}{l 2^l}, \tag{1}$$

for all $\lambda \le l$, all $k \in \mathbb{N}$ and all subsets $F \subset \{1, \ldots, k\}$ with $F \cap \{1, 2, \ldots, N_l - 1\} = \emptyset$ (with N_l as in the paper).

Then inequality (10) becomes

$$\Big\| \sum_{\substack{j \in A(\lambda, N_\lambda) \\ j<n}} T_n S_j y_\lambda \Big\| = \Big\| \sum_{\substack{j \in A(\lambda, N_\lambda) \\ j<n}} T_n S_{n-(n-j)} y_\lambda \Big\| \leq \frac{1}{l 2^l}, \tag{10}$$

which follows from (1) because we have that $|n-j| \geq N_l$. Moreover, inequality (11) now reads

$$\Big\| \sum_{\substack{j \in A(\lambda, N_\lambda) \\ j<n}} T_n S_j y_\lambda \Big\| = \Big\| \sum_{\substack{j \in A(\lambda, N_\lambda) \\ j<n}} T_n S_{n-(n-j)} y_\lambda \Big\| \leq \frac{1}{\lambda 2^\lambda}, \tag{11}$$

which follows from (1) because we also have that $|n-j| \geq N_\lambda$. Hence, (10) and (11) indeed imply that

$$\Big\| \sum_{j<n} T_n S_j z_j \Big\| \leq \sum_{\lambda=1}^{l} \frac{1}{l 2^l} + \sum_{\lambda=l+1}^{\infty} \frac{1}{\lambda 2^\lambda} \leq \frac{2}{2^l}, \tag{12}$$

as desired.

We note that, as before, the Frequent Hypercyclicity Criterion, Theorem 2.1 of [**1**], follows directly from the Frequent Universality Criterion. Also, no other result in [**1**] is affected by the correction.

Acknowledgement. The authors are grateful to Juan Bès and Alfredo Peris for pointing out the inconsistency to us.

Reference

[1] A. Bonilla and K.-G. Grosse-Erdmann. Frequently hypercyclic operators and vectors. *Ergodic Th. & Dynam. Sys.* **27** (2007), 383–404.