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Corrigendum: On Approximative Frames in Hilbert Spaces

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The paper [1] requires some clarifications, throughout the paper [1], $\{x_{n,i}\}_{\substack{i=1,2,\cdots,m_n \\ n\in\mathbb{N}}}$ is a sequence of special index in $\mathcal{H}$ such that $x_{n,i} = x_{n+1,i},\ i = 1,2,\cdots m_n; n \in \mathbb{N}$ and $\{\alpha_{n,i}\}_{\substack{i=1,2,\cdots,m_n \\ n\in\mathbb{N}}}$ is a sequence of special index in $\mathbb{K}$ such that $\alpha_{n,i} = \alpha_{n+1,i},\ i = 1,2,\cdots m_n; n \in \mathbb{N}$.

So, in view of the above clarification, Example 3.2 in [1], has the following justification:

Example 3.2. Let $\mathcal{H}$ be a Hilbert space and $\{e_n\}$ be an orthonormal basis for $\mathcal{H}$. Define a sequence $\{y_{n,i}\}_{\substack{i=1,2,\cdots,2n \\ n\in\mathbb{N}}}$ in $\mathcal{H}$ by

$$y_{n,i} = \begin{cases} e_i, & \text{if } i = 1,2,\cdots,n \\ e_r, & \text{if } i > n \text{ and } r \equiv i \bmod n. \end{cases}$$

Then the sequence $\{y_{n,i}\}_{\substack{i=1,2,\cdots,2n \\ n\in\mathbb{N}}}$ in $\mathcal{H}$ gives rise to a sequence $\{x_{n,i}\}_{\substack{i=1,2,\cdots,2n \\ n\in\mathbb{N}}}$ in $\mathcal{H}$ such that

$$\begin{aligned} x_{n,1} = x_{n,2} &= e_1 \\ x_{n,3} = x_{n,4} &= e_2 \\ &\vdots \\ x_{n,2n-1} = x_{n,2n} &= e_n,\ n \in \mathbb{N}. \end{aligned}$$

Thus, $\{x_{n,i}\}_{\substack{i=1,2,\cdots,2n \\ n\in\mathbb{N}}}$ is an approximative frame for $\mathcal{H}$ with approximate frame bounds $A = 1$ and $B = 2$. Hence the sequence $\{y_{n,i}\}_{\substack{i=1,2,\cdots,2n \\ n\in\mathbb{N}}}$ is approximative frame for $\mathcal{H}$ with the same approximative frame bounds.

References

[1] S.K. Sharma, A. Zothansanga and S.K. Kaushik, On Approximative Frames in Hilbert Spaces. Palestine Journal of Mathematics, Vol. 3, (2) 2014, 148-159.

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