Erratum

Erratum to “The Real and Complex Hermitian Solutions to a System of Quaternion Matrix Equations with Applications”

Shao-Wen Yu

Department of Mathematics, East China University of Science and Technology, Shanghai 200237, China

Correspondence should be addressed to Shao-Wen Yu; yushaowen@ecust.edu.cn

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In Lemma 2.4, the equalities in (2.7) and (2.8) should be deleted. Before Lemma 2.4, the following statement should be added.

Following the main idea of the proofs of Theorems 2.1 and 3.1 in [1], we can derive the following lemma over $\mathbb{H}$.

The original Lemma 2.4 should be replaced by the following.

Lemma 2.4. *Let $A = A^* \in \mathbb{H}^{m \times m}$, $B \in \mathbb{H}^{m \times n}$, and $C \in \mathbb{H}^{p \times m}$ be given; if $\mathcal{R}(B)$ is contained in $\mathcal{R}(C^*)$, then*

$$\begin{aligned} \max_X r[A - BXC - (BXC)^*] &= \min \left\{ r \begin{bmatrix} A & C^* \\ B^* & 0 \end{bmatrix}, r \begin{bmatrix} A & B \\ B^* & 0 \end{bmatrix} \right\}, \\ \min_X r[A - BXC - (BXC)^*] \\ &= 2r \begin{bmatrix} A & C^* \end{bmatrix} + r \begin{bmatrix} A & B \\ B^* & 0 \end{bmatrix} - 2r \begin{bmatrix} A & B \\ C & 0 \end{bmatrix}. \end{aligned} \quad (2.7)$$

References

- [1] Y. Liu and Y. Tian, “A simultaneous decomposition of a matrix triplet with applications,” *Numerical Linear Algebra with Applications*, vol. 18, no. 1, pp. 69–85, 2011.