

Review of the article by Ali Zand Vakili and Ali Farokhinia "Numerical radii inequalities for certain operator sums" submitted to "Siberian Electronic Mathematical Reports".

The paper deals with the well-known topic in the theory of bounded linear operators on Hilbert space — the estimates of numerical radius of certain operators. To the literature cited by the authors, one can add a monograph due to S.S. Dragomir "Kato's type inequalities for bounded linear operators in Hilbert space" (Springer Briefs in Mathematics, 2019).

The authors present several new estimates. The main of them stated in Theorem 2.1 based on operator matrix representation.

Below are the relevant comments and suggestions for improving the text.

Main remarks

1. In the proof of Theorem 2.1, line 1: the spaces \mathbb{H}_1 and \mathbb{H}_2 does not described. Why $T \in \mathbb{B}(\mathbb{H}_2, \mathbb{H}_1)$?

2. In the proof of Theorem 2.1, page 3: some (in)equalities used in the proof are not explained, for example,

$$\langle Ax, x \rangle \leq \langle A^{1/\alpha} x, x \rangle^\alpha, \quad 0 \leq \alpha \leq 1;$$

$$\begin{bmatrix} A & O \\ O & O \end{bmatrix}^p = \begin{bmatrix} A^p & O \\ O & O \end{bmatrix}, \quad p \geq 1.$$

3. The proof of Theorem 2.5 is not clear; or it contains an arithmetic mistake(?)

4. What is the novelty of the proof of Proposition 2.1 in relation to [7], if the facts from [7] are used twice?

Editorial comments

5. It seems appropriate to divide the second section into two parts, i.e. introduce the third section under the conventional title "Further inequalities", starting with Proposition 2.1

Typos

6. page 1, string 3 below: need "Respecting" instead of "respecting"

7. page 4, the proof of Corollary 2.2, line 3: need "in Corollary 2.1" instead of "in Theorem 2.1"

8. page 5, the proof of Theorem 2.2, line 1: need "By Corollary 2.3 and Lemma 2.1" instead of "By Corollary 2.2"

9. page 6: for Hilbert space there is used new symbol \mathcal{H}

10. page 6, the proof of theorem 2.3: what is $r(\dots)$?