A new matrix series expansions for the hyperbolic matrix cosine approximation

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ABSTRACT

Hyperbolic Matrix function $\cosh(A)$ emerge in various areas of science and technology, see for example [1, 2, 3], and its computation, and the computation of its action on a vector [4], has attracted significant attention due to their usefulness in the solution of systems of second-order linear differential equations, see [5, 6] and references therein.

In this work, we introduce a new polynomial series expansions for this function in order to obtain accurate and powerful methods for its computation and the computation of its action on a given vector. The proposed method is compared with those existing in the literature.

References

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