Least-squares solutions of the generalized reduced biquaternion matrix equations

Yong Tian[1], Xin LIU[1], and Yang Zhang[2]

[1]Macau University of Science and Technology
[2]Univ Manitoba

November 13, 2020

Abstract

In this paper, we introduce the definition of the generalized reduced biquaternions and propose a real representation of a generalized reduced biquaternion matrix. By using the matrix representation, we discuss the least-squares problems of the classic generalized reduced biquaternion matrix equation $AXC=B$. The least-squares solution to the above matrix equation is formulated by a least-squares real solution of its corresponding real matrix equation. Furthermore, two numerical examples are given to illustrate our results.

Hosted file

`TianLiuZhang2020.pdf` available at https://authorea.com/users/375599/articles/492760-least-squares-solutions-of-the-generalized-reduced-biquaternion-matrix-equations