

反对称偏对称矩阵反问题的最小二乘解

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Least-squares Solutions of Inverse Problem for Anti-symmetric and Persymmetric Matrices

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摘要 该文研究了反对称偏对称矩阵反问题的最小二乘解, 得到了该问题解的表达式以及该问题有解的充分必要条件. 证明了其最佳逼近解的存在性和唯一性, 建立了其最佳逼近解的表达式, 并给出了求最佳逼近解的数值算法和算例.

关键词: [反对称矩阵](#) [偏对称矩阵](#) [反问题](#) [最小二乘解](#) [最佳逼近](#)

Abstract: In this paper the authors mainly discuss the least-squares solutions of inverse problem for anti-symmetric and persymmetric matrices. The necessary and sufficient condition of solvability for the problem are conducted. And the general form of solutions is presented. Further, the authors study the optimal approximation solution to any given matrix, prove that such solution is unique and provide the formula to compute it. A numerical examples is given to demonstrate that the results are right and the algorithm is feasible.

Key words: [anti-symmetric matrix](#) [persymmetric matrix](#) [inverse problem](#) [least-squares solution](#) [best approximation](#)

收稿日期: 2008-06-29;


基金资助:国家自然科学基金(10671077, 10971075), 广东省自然科学基金(06025061, 9151063101000021) 以及广东工业大学校级博士启动基金(103005)资助项目.

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引用本文:

莫荣华, 黎稳. 反对称偏对称矩阵反问题的最小二乘解[J]. 应用数学学报, 2012, (2): 221-231.

MO Ronghua, LI Wen. Least-squares Solutions of Inverse Problem for Anti-symmetric and Persymmetric Matrices[J]. Acta Mathematicae Applicatae Sinica, 2012, (2): 221-231.


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