

This is a review submitted to Mathematical Reviews/MathSciNet.

Reviewer Name: Znojil, M.

Mathematical Reviews/MathSciNet Reviewer Number: 13388

Address:

Theory Group
NPI ASCR
250 68 Řež u Prahy
CZECH REPUBLIC
znojil@ujf.cas.cz

Author: Ferranti, Micol; Le, Thanh Hieu; Vandebril, Raf

Title: A comparison between the complex symmetric based and classical computation of the singular value decomposition of normal matrices.

MR Number: MR3252840

Primary classification: 65F15

Secondary classification(s): 15A23

Review text:

One should not feel too happy with the presented alternative algorithm(s) for computing the singular value decomposition (SVD) of normal matrices. Although the key idea is interesting (viz., trying to make an explicit use of the normality and introducing a detour via complex symmetric matrices) and although its implementation leads to some interesting experimental observations (viz., an amendment of the memory consumption and a certain lowering of the computational complexity), the key weakness of the whole approach (viz., a sensitivity to the clustered eigenvalues and an apparent loss of competitiveness in accuracy) is just reconfirmed by the authors conclusion that “further research is required”.