Matrix Factorizations With Newton's Method

Authors:

- Jean-Claude Yakoubsohn, Institut de Mathématiques de Toulouse (
  `jean-claude.yakoubsohn@math.univ-toulouse.fr`)

Abstract:

We present a general group-theoretic framework to derive efficient Newton-like iterations for the computation and certificate of various matrix decompositions, assuming that a suitable condition is known. We illustrate the approach on a list of applications, such as LU-decomposition, QR-decomposition, eigen decomposition, singular value decomposition. This framework generalize the contents of the paper [1]

References:

[1] Rima Khouja, Bernard Mourrain, Jrean-Claudse Yakoubsohn Newton-type methods for simultaneous matrix diagonalization.Calclolo(2022), 59:38.