C. G. Baker

Low-Rank Incremental Methods for Computing Dominant Singular Subspaces.

Florida State University
cgbaker@gmail.com
K. A. Gallivan
P. Van Dooren

This paper describes a generic low-rank incremental method for computing the dominant singular triplets of a matrix via a single pass through the matrix. This work unifies several efforts previously described in the literature. We tie the operation of the proposed method to a particular optimization- based eigensolver. This allows the description of mechanisms for exploiting multiple passes through the matrix. We conclude with some numerical experiments and a discussion on possible applications of the method.