João R. Cardoso and Krystyna Ziętak On a Sub-Stiefel Procrustes Problem Arising in Computer Vision Numerical Linear Algebra with Applications (2015) Early View 26 Feb. 2015 DOI: onlinelibrary.wiley.com/doi/10.1002/nla.1969

In this paper we consider a Procrustes problem on the set of sub-Stiefel matrices. A sub-Stiefel matrix is a matrix that results from deleting simultaneously the last row and the last column of an orthogonal matrix.

An iterative algorithm for computing the solution of the sub-Stiefel Procrustes problem is proposed. For these purposes we investigate the properties of sub-Stiefel matrices. We also relate the sub-Stiefel Procrustes problem with the Stiefel Procrustes problem and compare it with the orthogonal Procrustes problem.