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**Pierre Youssef\*** (pyoussef@ualberta.ca). *Minimizing the Hilbert-Schmidt norm of the inverse of submatrices.*

Given  $U$  an  $n \times m$  matrix of rank  $n$  whose columns are denoted by  $(u_j)_{j \leq m}$ , we consider the problem of finding a subset  $\sigma \subset \{1, \dots\}$  such that  $\sqrt{\text{Tr} \left( \left( \sum_{i \in \sigma} u_i u_i^t \right)^{-1} \right)}$  is minimized. We also consider the same problem under the constraint of preserving a block of columns inside  $U$ . The methods used develop into algorithms. (Received August 26, 2014)