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Yang Liu* (yliu15@wm.edu), Department of Mathematics, College of William and Mary, P.O. Box 8795, Williamsburg, VA 23187. *Lower Rank Approximation: A Generalization of Schmidt-Mirsky Theorem and Algorithms.*

We study the optimal approximation of linear operators, especially, the linear operator on ℓ_p -space. Considering the generalized singular values, we prove an extension of Schmidt-Mirsky theorem. The results can be applied to matrix completion and sparse matrix recovery. (Received September 21, 2011)