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**Yang Liu\*** (yliu@marlboro.edu), Marlboro College P.O. Box A 2582 South Road, Marlboro, VT 05344. *Lower Rank Approximation: A Generalization of Schmidt-Mirsky Theorem and Algorithms.*

We study the optimal approximation of linear operators, especially, the linear operator on  $\ell_p$ -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 December 23, 2010)