

NEW REPRESENTATIONS FOR THE MOORE-PENROSE INVERSE*

HONGXING WANG † and MUSHENG WEI ‡

Abstract. In this paper, some new representations of the Moore-Penrose inverse of a complex $m \times n$ matrix of rank r in terms of $(s \times t)$ -constrained submatrices with $m \ge s \ge r$, $n \ge t \ge r$ are presented.

Key words. Constrained submatrix, Moore-Penrose inverse.

AMS subject classifications. 15A15, 15A09.

^{*}Received by the editors on August 23, 2010. Accepted for publication on July 2, 2011. Handling Editor: Ravindra B. Bapat.

[†]Department of Mathematics, Huainan Normal University, Huainan Anhui, 232001, P.R. China, and Department of Mathematics, East China Normal University, Shanghai, 200234, P.R. China (winghongxing0902@163.com). Supported by the Excellent Young Talents Foundation in Universities of Anhui Province (No. 2009SQRZ163ZD).

[‡]Department of Mathematics, Shanghai Normal University, Shanghai 200234, P.R. China (mwei@shnu.edu.cn). Supported by National Natural Science Foundation of China (No. 10771073) and Shanghai Leading Academic Discipline Project (No. S30405).