

## SOME RESULTS ON MATRIX PARTIAL ORDERINGS AND REVERSE ORDER LAW\*

JULIO BENÍTEZ<sup>†</sup>, XIAOJI LIU<sup>‡</sup>, AND JIN ZHONG<sup>§</sup>

**Abstract.** Some results relating different matrix partial orderings and the reverse order law for the Moore-Penrose inverse and the group inverse are given. Special attention is paid when at least one of the two involved matrices is EP.

**Key words.** Partial ordering, Moore-Penrose inverse, Group inverse, Reverse order law.

**AMS subject classifications.** 15A09, 15A57.

---

\*Received by the editors April 27, 2009. Accepted for publication April 19, 2010. Handling Editor: Ravindra B. Bapat.

<sup>†</sup>Departamento de Matemática Aplicada, Instituto de Matemática Multidisciplinar, Universidad Politécnica de Valencia, Camino de Vera s/n, 46022, Valencia, Spain (jbenitez@mat.upv.es).

<sup>‡</sup>College of Mathematics and Computer Science, Guangxi University for Nationalities, Nanning 530006, China (xiaojiliu72@yahoo.com.cn).

<sup>§</sup>Department of Mathematics, East China Normal University, Shanghai 200241, China (zhongjin1984@126.com).