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GROUP INVERSES FOR MATRICES OVER A BEZOUT DOMAIN[*]

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Abstract. Suppose **R** is a Bezout domain. In this paper, some necessary and sufficient conditions for the existence of the group inverse for square matrix over **R** are given, the conditions for the existence of the group inverse of products of matrices are studied, and the equivalent conditions for reverse order law of group inverse of product of matrices are obtained. Also the existence and the representation of the group inverse for a class 2×2 block matrices over **R** are studied, and some well known relative results are generalized.

Key words. Bezout domain, Group inverse, Right **R**–module, Block matrix.

AMS subject classifications. 15A09.