Electronic Journal of Linear Algebra ISSN 1081-3810
A publication of the International Linear Algebra Society
Volume 16, pp. 111-124, April 2007

ELA
http://math.technion.ac.il/iic/ela

ON ROTH'S PSEUDO EQUIVALENCE OVER RINGS*

R.E. HARTWIG† AND PEDRO PATRICIO‡

Abstract. The pseudo-equivalence of a block lower triangular matrix $T = [T_{ij}]$ over a regular ring and its block diagonal matrix $D(T) = [T_{ii}]$ is characterized in terms of suitable Roth consistency conditions. The latter can in turn be expressed in terms of the solvability of certain matrix equations of the form $T_{ii}X - YT_{jj} = U_{ij}$.

Key words. Regular rings, Roth equivalence.

AMS subject classifications. 16A30, 15A21.

*Received by the editors 21 March 2006. Accepted for publication 11 March 2007. Handling Editor: Roger A. Horn.

†Mathematics Department, N.C.S.U. Raleigh, NC 27695-8205, U.S.A. (hartwig@unity.ncsu.edu).

‡Departamento de Matemática, Universidade do Minho, 4710-057 Braga, Portugal (pedro@math.uminho.pt). Member of the research unit CMAT – Centro de Matemática da Universidade do Minho, Portugal.