Electronic Journal of Linear Algebra ISSN 1081-3810
A publication of the International Linear Algebra Society
Volume 16, pp. 30-43, January 2007

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

INERTIALLY ARBITRARY NONZERO PATTERNS OF ORDER 4*

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Abstract. Inertially arbitrary nonzero patterns of order at most 4 are characterized. Some of these patterns are demonstrated to be inertially arbitrary but not spectrally arbitrary. The order 4 sign patterns which are inertially arbitrary and have a nonzero pattern that is not spectrally arbitrary are also described. There exists an irreducible nonzero pattern which is inertially arbitrary but has no signing that is inertially arbitrary. In fact, up to equivalence, this pattern is unique among the irreducible order 4 patterns with this property.

Key words. Sign pattern, Nonzero pattern, Inertia, Spectrum.

AMS subject classifications. 15A18, 15A29, 05C50.

*Received by the editors 10 October 2006. Accepted for publication 5 January 2007. Handling Editor: Michael J. Tsatsomeros.

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