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The Construction of Maximum Independent Set of Matrices via Clifford Algebras

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Abstract: In [1], [2] and [6] the maximum number of some special type n x n matrices with elements in F whose nontrivial linear combinations with real coefficients are nonsingular is studied where F is the real field R, the complex field C or the skew field H of quaternions. In this work we construct such matrices explicitly by using representations of Clifford algebras. At the end we give some analogues of the celebrated theorem of Radon-Hurwitz.

Key Words: Hurwitz Theorem, Clifford algebras, maximum independent set of matrices