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ADDITIVE RANK–ONE NONINCREASING MAPS ON HERMITIAN MATRICES OVER THE FIELD $GF(2^2)$[*]

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Abstract. A complete classification of additive rank–one nonincreasing maps on hermitian matrices over Galois field $GF(2^2)$ is obtained. This field is special and was not covered in a previous paper. As a consequence, some known applications, like the classification of additive rank–additivity preserving maps, are extended to arbitrary fields. An application concerning the preservers of hermitian varieties is also presented.

Key words. Hermitian matrix, Rank, Additive preserver, Galois field, Weak homomorphism of a graph.

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