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Group Gradings on Associative Algebras with Involution

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Abstract. In this paper we describe the group gradings by a finite abelian group G of the matrix algebra $M_n(F)$ over an algebraically closed field F of characteristic different from 2, which respect an involution (involution gradings). We also describe, under somewhat heavier restrictions on the base field, all G-gradings on all finite-dimensional involution simple algebras.

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