

Upper triangular matrices: gradings and polynomial identities

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Abstract

In this presentation, we will introduce graded algebras, focusing on the group gradings of upper triangular matrices and the notion of graded polynomial identities. Our main objectives are to show that two elementary gradings on UT_n are isomorphic if, and only if, they satisfy the same set of graded polynomial identities and to do the description of all G -gradings in UT_n , for an arbitrary group G .

References

- [1] O. DI VICENZO, P. KOSHLUKOV, A. VALENTI. *Gradings on the algebra of upper triangular matrices and their graded identities*, **Journal of Algebra**, Vol. 275 (2004).
- [2] A. VALENTI, M.V. ZAICEV. *Group gradings on upper triangular matrices*, **Archiv der Mathematik**, Vol. 89 (2007).

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