Group gradings on the algebras of block-triangular matrices

Mikhail Kotchetov (Memorial University of Newfoundland, Canada)
mikhail@mun.ca

Recently there has been a considerable interest in classifying gradings by arbitrary groups on nonassociative algebras. The situation is well understood for finite-dimensional simple algebras of several important varieties including associative, Lie and Jordan (over sufficiently good fields). Much less is known about gradings on non-simple algebras. In this talk, we will discuss a classification up to isomorphism of gradings by abelian groups on the upper block-triangular matrices over an algebraically closed field, regarded as an associative, Lie or Jordan algebra, assuming zero characteristic in the latter two cases.

This is a joint work with Felipe Yasumura. The associative case was originally done by A. Valenti and M. Zaicev (2012) under some technical assumptions.