

LINEAR CORES OF GRADED ALGEBRAS

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ABSTRACT. Let A be a standard graded algebra over a field, $d = \dim A$ and $m = \operatorname{embdim}(A)$. Fix a number $t < m$. We call an ideal generated by t linear forms of A a t -linear ideal. Every t -linear ideal can be parametrized by a point of the projective space $\mathbb{P}_k^{dm-1}$. We consider the class of ideals, which are intersections of t -linear ideals belonging to nonempty Zariski-open sets of $\mathbb{P}_k^{dm-1}$. This class has a unique largest ideal, which we call the t -linear core of A . The t -linear core can be used to study the weak Lefschetz property and the core of A . The aim of this talk is to give an overview on this notion and its applications.