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jdeg *of algebraic structures*

Let R be a commutative Noetherian ring and A a finitely generated standard graded R-algebra. We introduce and develop a new degree $\mathrm{jdeg}(\cdot)$ attached to finitely generated graded A-modules. This construction $\mathrm{jdeg}(\cdot)$ coincides with the classical multiplicity $\deg(\cdot)$ when R is an Artinian local ring. It also acquires a global nature in contrast to other extensions of $\deg(\cdot)$ usually requiring R to be local or graded.

An important application of $\mathrm{jdeg}(\cdot)$, which is also the original motivation of this notion, is to measure the length of the chains of graded subalgebras between A and its integral closure $\bar{A}$, constructed by general algorithms. This gives a refinement of recent results to very general graded algebras.