

# Rank algorithms, Hilbert functions and non-saturated ideals

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Some of the classical tensor decomposition algorithms are based on the ability of solving particular zero-dimensional polynomial system, defining the set of points of the decomposition. Generalized eigenvalue methods can be used for this task, and their complexity is controlled by the regularity of certain associated ideals, which are often non-saturated. We determine these regularity values in a restricted range, drawing connections to classical problems in commutative algebra, such as the Minimal Resolution Conjecture and the Ideal Generation Conjecture. This is based on joint work with Leonie Kayser and Simon Telen.

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