Abstract

In 1979, M. Brodmann [5] showed that for any ideal I in a Noetherian ring A, the sequence $(Ass(A/I^n))_{n \in \mathbb{N}}$ eventually stabilizes to a finite set. At the same time, an example due to Sathaye shows that the sequence $(Ass(A/I^n))_{n \in \mathbb{N}}$ is not monotone. The example of Sathaye was not a monomial ideal. However, examples given by Herzog and Hibi showed that even for general monomial ideals the sequence is not monotone. But their example was not a square-free monomial ideal. Square free monomial ideals are of great importance in Combinatorial Commutative Algebra, as they appear as edge ideals or Stanley-Reisner ideals. For several classes of square-free monomial ideals, like for example edge ideals, it is proved that the sequence is increasing.