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Symbolic powers of prime ideals (preliminary report). Preliminary report.

An old question of Huneke asks whether the containment $I^{(3)} \subseteq I^2$ is true when I is an equidimensional codimension 2 reduced ideal in a regular local ring. This questions was later extended by Harbourne and Huneke to higher codimension. A counterexample was found by Dumnicki, Szemberg and Tutaj-Gasińskna for special configurations of points in \mathbb{P}^2 . However, there are no known counterexamples for primes.

Seceleanu has recently given an homological criterion for this containment to hold in \mathbb{P}^2 . Using a generalization of her ideas, we are able to give a positive answer to Huneke's question for monomial curves in k[x,y,z]. (Received February 13, 2016)