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On the Waldschmidt constant and resurgence of some ideals in \mathbb{P}^n and $\mathbb{P}^1 \times \mathbb{P}^1$

We are interested in the ideal containment problem: given a nontrivial homogeneous ideal I of a polynomial ring $R = k[x_1, \dots, x_n]$ over a field k , the problem is to determine all positive integer pairs (m, r) such that $I^{(m)} \subseteq I^r$. Most of the work done up to now has been done for ideals defining 0-dimensional subschemes of projective space. Here, we focus on certain ideals defined by a union of lines in \mathbb{P}^3 which can also be viewed as points in $\mathbb{P}^1 \times \mathbb{P}^1$. We also consider ideals of s general lines in \mathbb{P}^n . We give results in the case of squarefree monomial ideals. This talk is based on joint papers with B. Harbourne, A. Van Tuyl and MFO Group.