

THE IMPROVED NEW INTERSECTION THEOREM REVISITED

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ABSTRACT. The origins of the Improved New Intersection Theorem can be traced back to the following linear algebra exercise: let U, V, W be vector spaces over a field such that $U, V \subseteq W$, then the dimension of $U \cap V$ is at least $\dim U + \dim V - \dim W$. In their most modern forms, the intersection theorems are concerned with bounding the length of finite free complexes over local rings. In this talk, we will explore the history of these theorems, culminating in a result due to L. Christensen and me.