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**Paolo Mantero\*** ([mantero@math.ucr.edu](mailto:mantero@math.ucr.edu)), University of California at Riverside, and **Jason McCullough**, Rider University. *Projective dimension of ideals generated by 3 cubics*. Preliminary report.

Let  $R$  be a polynomial ring over a field and  $I$  an ideal generated by three forms of degree three. Motivated by Stillman's question, Engheta in a series of 3 papers proved that the projective dimension  $\text{pd}(R/I)$  is at most 36. Since the largest known example has  $\text{pd}(R/I) = 5$ , for several years it has been asked what is the sharp upper bound for  $\text{pd}(R/I)$ .

In this paper we prove  $\text{pd}(R/I) \leq 5$ , which, by the above, is sharp. (Received August 25, 2014)