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Elena Guardo* (guardo@dmi.unict.it), Dipartimento di Matematica e Informatica, Viale A. Doria, 6, 95125 Catania, Sicily, Italy, and **Lucia Marino** (lmarino@dmi.unict.it), Dipartimento di Matematica e Informatica, Viale A. Doria, 6, 95125 Catania, Sicily, Italy. *Minimal Separators of fat points in \mathbb{P}^n .*

In this paper we give the definition of a minimal separators degree of a fat point in \mathbb{P}^n . In particular, given a set Z of fat points in \mathbb{P}^n , for each fat point P_i of multiplicity m_i we define some tuples whose entries are among the last syzygies minus n of a minimal graded free resolution of Z . We apply this result in the case the support of the fat point scheme is either a complete intersection or a complete intersection minus a point. Moreover, in \mathbb{P}^2 we relate these results with the properties of particular reduced schemes called *partial intersections*.

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