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Lance E. Miller and **Benjamin Steinhurst*** (bsteinhurst@mcdaniel.edu). *Sierpinski-type fractafolds with Algebraic content: p -fractals*. Preliminary report.

A recent result of Hernandez and Teixeira has shown that the zero set of a function involving the length of an ideal in $k[x, y]$ (called a syzygy gap fractal) where k is a field of characteristic $p > 0$ when intersected with well chosen hyperplanes yield level p Sierpinski gaskets. This function is derived from two ideals $\langle x \rangle$, $\langle y \rangle$ and a collection of linear forms x , y , and $x + y$. However it is possible to choose other ideals and linear forms. We will discuss what the analogous fractals obtained from other choices of the two ideals. As well as the self-similarity properties of the function and its zero set. The goal of this investigation is to extract algebraic information from the fractal geometry of the syzygy gap fractal (which is a function) and the wider class of p -fractals that have been introduced by Teixeira. (Received January 29, 2016)