

1158-16-244

Ian Christopher Lim* (ian.lim@mavs.uta.edu) and **Michaela Vancliff**
(mvancliff@gmail.com). *Quadratic Quantum \mathbb{P}^3 s with a Linear Line Scheme.*

It is believed that quadratic Artin-Schelter regular (AS-regular) algebras of global dimension four (sometimes called quadratic quantum \mathbb{P}^3 s) can be classified using a geometry similar to that developed in the 1980's by Artin, Tate, and Van den Bergh. Their geometry involved studying a scheme (later called the point scheme) that parametrizes the point modules over a graded algebra. The notion of line scheme (which parametrizes line modules) was introduced later by Shelton and Vancliff. It is known that “generic” quadratic AS-regular algebras of global dimension four have a finite point scheme and one-dimensional line scheme. We will discuss a family of quadratic AS-regular algebras of global dimension four where each member has a line scheme that is a union of lines. Moreover, we prove that if a quadratic AS-regular algebra A of global dimension four is an Ore extension of a quadratic AS-regular algebra B of global dimension three, then the point scheme of B is embedded in the line scheme of A . (Received March 02, 2020)