

1023-14-1673

Milena S Hering* (hering@ima.umn.edu), Institute of Mathematics and its Applications, 207 Church Street SE, Minneapolis, MN 55455, and **Henry Schenck** and **Gregory Smith**. *Syzygies of toric varieties*.

We study the equations defining a projective variety and the higher syzygies between them using multigraded regularity as introduced by Maclagan and Smith. As an application, we obtain a sufficient condition for the power of an ample line bundle on a toric variety guaranteeing that the corresponding embedded variety is projectively normal and generated by quadratic equations, and that the first p syzygies are linear. This technique also yields new results for the syzygies of Veronese-Segre embeddings. This is joint work with H. Schenck and G. Smith. (Received September 26, 2006)