

1106-13-1565

Alexandra Seceleanu* (aseceleanu@unl.edu). *Using syzygies to test containments between symbolic and ordinary powers for some ideals of points.*

Symbolic powers of ideals play a significant part in algebraic geometry and in commutative algebra, where containment relations between symbolic powers and ordinary powers have become a focus of interest. This area has seen exciting new developments recently. It had been expected that $I^{(Nr-N-1)} \subseteq I^r$ should hold for the ideal I of any finite set of points in \mathbb{P}^N and all $r > 0$, but in the last years various counterexamples to this conjecture have been constructed, some involving classical configurations of points that go back to Hesse and Klein. My talk will describe a homological criterion to detect the failure of the containment of the symbolic cube in the square of some ideals defining reduced sets of points in the projective plane (the case $N = r = 2$), that can be applied to these counterexamples. (Received September 14, 2014)