RATIONALITY PROBLEMS FOR LINEAR SPACES ON PENCILS OF QUADRICS

LENA JI

Linear spaces contained in the base locus of a pencil of quadrics encode a lot of interesting geometry. For example, for pencils of even-dimensional quadrics, there is a deep relationship between these linear spaces and hyperelliptic curves, dating back to Weil. This has found numerous applications, e.g. to rational points and to moduli theory. In this talk, we study rationality questions for the Fano schemes of these linear spaces, especially over non-closed fields. Our main focus is the case of second maximal linear subspaces, and we

generalize results of Hassett–Tschinkel, Benoist–Wittenberg, and Hassett–Koll´ar–Tschinkel. This work is joint with Fumiaki Suzuki.