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Automorphisms of pencils of quadrics. Preliminary report.

The plane Cremona group is the group of birational automorphisms of the projective plane. Over an algebraically closed field of characteristic zero, its finite subgroups have been (mostly) classified up to conjugacy. An analogous classification in positive characteristic is still open. To study these groups, it suffices to consider certain rational surfaces on which the group acts by ordinary automorphisms. One such class of surfaces are the del Pezzo surfaces of degree 4.

A del Pezzo surface of degree 4 is the intersection of two quadrics in projective space of dimension 4. With this as motivation, I describe the automorphism group of a variety given by the intersection of two quadratic forms in projective space. Of particular interest is the case where the base field has characteristic 2 and the ambient space is of even dimension. (Received January 30, 2015)