Involutions of the real projective plane

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Birational involutions of the complex plane have been classified up to conjugation by Bayle and Beauville about twenty years ago. If they fix an irrational curve, then they fix a unique irrational curve and the conjugacy classes are in one to one correspondance with the isomorphism classes of the fixed curves. However, if we ask that the birational involutions commute with the antiholomorphic involution of the plane, the classification becomes much more involved. For instance, distinct conjugacy classes may have real isomorphic fixed curves and there are involutions of real del Pezzo surfaces of degree 2 that are not conjugate to Geiser involutions. This is work in progress with V. Cheltsov, F. Mangolte and E. Yasinsky.