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ON COPPEL'S DREAM

In 1966, Coppel published "A survey on Quadratic Systems", JDE . He conjectured there that "Ideally one might hope to characterize the phase portraits of quadratic systems by means of algebraic inequalities on the coefficients." This was proved false some years later when several results by Dumortier and Roussarie showed that phenomena like connections of separatrices or the born of semiestable limit cycles could not be ruled by means of algebraic terms. Anyway, there are still many things that can be ruled by means of algebraic tools and during the last years great advance has been achieved. We are going to present here some of these tools and results.