

On Lie problem and differential invariants for subgroups of the plane Cremona group

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We develop a new approach to the study of subgroups of Cremona groups. Namely a subgroup of the plane Cremona group may be represented as a symmetry group of differential equations of the form $y'' = F(x, y)$ with polynomial or rational sides, which makes it possible to apply for their study methods of differential invariants theory and geometric theory of differential equations. So we can consider a class of differential equations, which is a “differential model” of the subgroup of Cremona group. Also using algebraic methods in the theory of differential equations we obtain a global classification of such equations.
