

The Complete System of Global Integral and Differential Invariants for Centro-affine Curves

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Abstract

Let $GL(n, R)$ be the general linear group of $n \times n$ real matrices. Definitions of $GL(n, R)$ -equivalence and the centro-affine type of curves are introduced. All possible centro-affine types are founded. For every centro affine type all invariant parametrizations of a curve are described. The problem of $GL(n, R)$ -equivalence of curves is reduced to that of paths. A generating system of the differential field of invariant differential rational functions of a path is described. They can be viewed as centro-affine curvatures of a path. Global conditions of $GL(n, R)$ -equivalence of curves are given in terms of the centro-affine type and the generating differential invariants. Independence of elements of the generating differential invariants is proved.