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On constructing single-input non-autonomous systems of full rank. (English) Zbl 1424.93024
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Summary: For a nonlinear system of differential equations $\dot{x} = f(x)$, a method of constructing a system of full rank $\dot{x} = f(x) + g(x)u$ is studied for vector fields of the class C^k , $1 \leq k < \infty$, in the case when $f(x) \neq 0$. A method for constructing a non-autonomous system of full rank is proposed in the case when the vector field $f(x)$ can vanish.

MSC:

93B10 Canonical structure

93C10 Nonlinear systems in control theory

93C15 Control/observation systems governed by ordinary differential equations

Keywords:

nonlinear control system; accessible system; system of full rank; non-autonomous system; the straightening theorem for vector fields

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