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Global synthesis of bounded controls for systems with power nonlinearity. (English)

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Summary: In this work we consider the problem of global bounded control synthesis for a nonlinear system with uncontrollable first approximation. A class of bounded controls that steer the system from any initial state to the origin in some finite time is constructed based on the controllability function method.

MSC:

- 93B50 Synthesis problems
- 93B52 Feedback control
- 93C10 Nonlinear systems in control theory
- 93D15 Stabilization of systems by feedback
- 93B05 Controllability

Keywords:

synthesis problem; finite-time stabilization; nonlinear system; controllability function method