

论文

## DESIGN OF NONLINEAR OBSERVERS

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**摘要** The design of observers for nonlinear controlled systems presented in this paper consists of two stages. In the first stage, the nonlinear controlled system is transformed into an observability canonical form by means of a generalized state transformation, in which the control variables (inputs) are parameterized, and then the system is control-free. In the second stage, an observer is designed for a control-free system. From the mathematical point of view the method given in this paper is valid for any observable nonlinear controlled (analytic) system, but from the engineering point of view the design for nonlinear observers is constrained by the choice of input variables. By several examples it is demonstrated how to design the observers practically.

**关键词** [Nonlinear system, observability, general](#)

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**Key words** [Nonlinear system](#) [observability](#) [generalized state transformation](#)

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