

Linearization by Completely Generalized Input-Output Injection.

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Abstract: The problem addressed in this paper is the linearization of nonlinear systems by generalized input-output (I/O) injection. The I/O injection (called *completely generalized I/O injection*) depends on a finite number of time derivatives of input and output functions. The practical goal is the observer synthesis with linear error dynamics. The method is based on the I/O differential equation structure. Thus, the problem is solved as a realization one. A necessary and sufficient condition is proposed through a constructive algorithm and is based on the exterior differentiation.

Keywords:

AMS Subject Classification: