

Abstract Submitted  
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**Backstepping In Control And Track of Chaotic Systems** GUESSAS

LAAREM, BENMAHAMMAD KHIER — This paper is concerned with the control and track of chaotic systems, which can be transformed into a class of nonlinear systems in the so-called non-autonomous “strict-feedback” form, using Backstepping that is a systematic design approach for constructing both feedback control laws and associated Lyapunov functions. To illustrate the feasibility of the proposed control scheme, several chaotic systems are used, arising from the non-autonomous second order parametric-strict-feedback form such as Duffing, Van der pol oscillators, to the autonomous third order parametric-strict-feedback such as Chua circuit, Lorenz chaotic system and it is shown that the output of the system can asymptotically track the output or at least near of any known, bounded and smooth nonlinear desired state. That is to say, we wish to make this state a stable equilibrium of the closed loop system. Strong properties of global and asymptotic stability can be achieved. A major advantage of this method is that it has the flexibility to build the control law by avoiding cancellations of useful nonlinearities.

Guessas Laarem

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