# Article information:

Active Disturbance Rejection Control for Nonaffined Globally Lipschitz Nonlinear Discrete-Time Systems | IEEE Journals & Magazine | IEEE Xplore
<https://ieeexplore.ieee.org/document/9321505>

# Article summary:

1. The design and analysis of active disturbance rejection control (ADRC) is considered for a globally Lipschitz nonlinear discrete-time system, which is nonaffine to control inputs.

2. A local dynamic linearization is proposed to transfer the original nonaffined nonlinear system into a nonlinear system affine to control input such that the open problem of selecting a control gain in the feedback control law of ADRC is solved.

3. The stability of ADRC for nonlinear nonaffine discrete-time processes is analyzed rigorously with the aid of contraction mapping principle.

# Article rating:

Appears well balanced: The article presents the information in a reliable and balanced way, without biases and prejudices. The claims made in the article are well supported and, where applicable, all sides of the argument are given opportunity to present their point of view. The article appears trustworthy and reliable.

# Article analysis:

The article provides an overview of active disturbance rejection control (ADRC) for a globally Lipschitz nonlinear discrete-time system, which is nonaffine to control inputs. The article presents a local dynamic linearization approach to solve the open problem of selecting a control gain in the feedback control law of ADRC and provides an analysis of the stability of ADRC for such systems using contraction mapping principle. The article also discusses how parameter updating laws and adaptive extended state observers can be used to estimate control gains and total uncertainty respectively.

The article appears to be reliable and trustworthy as it provides detailed information on the design and analysis of ADRC for such systems, as well as providing evidence from simulations that support its claims. Furthermore, it does not appear to have any biases or one-sided reporting, as it presents both sides equally and does not make any unsupported claims or missing points of consideration. Additionally, there does not appear to be any promotional content or partiality present in the article, nor are there any risks noted that could potentially affect its reliability or trustworthiness.

# Topics for further research:

* Nonlinear Discrete-Time System Control
* Adaptive Extended State Observers
* Global Lipschitz Nonlinear Systems
* Contraction Mapping Principle
* Parameter Updating Laws
* Active Disturbance Rejection Control Design

# Report location:

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