
# PARETO OPTIMAL ROBUST FEEDBACK LINEARIZATION CONTROL OF A NONLINEAR SYSTEM WITH PARAMETRIC UNCERTAINTIES

A. Hajiloo[1, 3], M. samadi[2], N. Nariman-Zadeh[3]

[1]Department of Mechanical and Industrial Engineering, Concordia University, Montreal, Canada.

[2]Department of Mechanical Engineering, Islamic Azad University, Takestan, Iran.

[3]Department of Mechanical Engineering, Engineering Faculty, Guilan University, Rasht, Iran.

Emails: am_haj@encs.concordia.ca; gudarzsamadi@gmail.com; nnzadeh@guilan.ac.ir

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***Abstract- The problem of multi-objective robust feedback linearization controller design of nonlinear system with parametric uncertainties is solved in this paper. The main objective of this paper is to propose an optimal technique to design a robust feedback linearization controller with multi-objective genetic algorithm. A nonlinear system is considered as a benchmark and feedback linearization controller is designed for deterministic and probabilistic model of the benchmark. Three and four conflicting objective functions are used in Pareto design of feedback linearization controller for deterministic and probabilistic design, respectively. The simulation results reveal the effectiveness of the proposed method.***

**Index terms*:* Pareto, Feedback Linearization, Parametric Uncertainty, Robust Design.**