Gravitational search algorithm-based design of fuzzy control systems with a reduced parametric sensitivity

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Abstract

This paper proposes the design of fuzzy control syst
use of Gravitational Search Algorithms (GSAs). The
sensitivity models. Objective functions expressed as
depend on the control error and squared output sens
to minimize the objective functions in the appropriate
suggests a GSA with improved search accuracy. The
the denominator in the expression of the force acting
depends not only on the Euclidian distance between
A design method for Takagi-Sugeno proportional-inte
FCs are dedicated to a class of processes characteri

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with an integral component. Two discrete-time sensit
derived. An example dealing with the angular positio
laboratory equipment validates the new controller de
illustrates the fuzzy control system performance. (C)

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