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Abstract
Genetic algorithms (GAs) are search algorithms that reflect in a primitive way some of the processes of natural evolution including crossover, mutation, and survival of the fittest. Research shows that GAs can be used to obtain an approximate solution for single variable or multivariable optimal problems, and therefore we used GAs to solve this problem of a conventional FLC. In this study we proposed an intelligent fuzzy logic-based genetic algorithms by using genetic algorithm and FLC system are discussed in which the membership function shapes and types and the fuzzy rule set including the number of rules inside it are evolved using a GAs. In addition, crossover and mutation are two critical genetic parameters (operators). We use fuzzy control to dynamic adjustment the crossover rate and mutation rate to enhance evolution velocity. Finally, the simulation motor and active suspension system controlled result demonstrate that the propose method can get the faster evolution process, and the evolutionary fuzzy system can obtain the better performance, when has the fewer fuzzy variables.
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