CLUSTERING – A NOVEL METHOD
OF REDUCING FUZZY RULES

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Abstract

In the decade gone by a lot of focus is given on replacing the conventionally used PI or PID controllers by using controllers utilizing intelligent systems. Of the different intelligent controllers a Fuzzy Logic Controller (FLC) is most widely accepted controller for any process control. Although FLC has wide range of applications, the process becomes slower with increase in number of rules present in the rule base of the FLC. Hence, in this paper a novel method utilizing subtractive clustering is proposed to reduce the number of rules. The parameters considered for comparative analysis are rise time, settling time, peak overshoot. Simulation results are presented and analyzed to validate the proposed method. Also in this paper clustering using Hard c-means (HCM) and Fuzzy c-means (FCM) methods are discussed and it is observed that subtractive clustering is better than the other two clustering methods.