

In this paper, an improved adaptation mechanism for tuning of fuzzy logic controllers using gradient descent method is proposed. The proposed algorithm is used for input/output membership functions tuning of a fuzzy controller by minimising some criterion on the control output. The optimisation problem is solved using gradient descent technique. In this tuning procedure, the constant which controls how much the fuzzy controller parameters are altered at each iteration is updated using a fuzzy logic approximate reasoning modelled as a set of IF-THEN rules. To illustrate the usefulness and the effectiveness of the improved algorithm, we consider the problem of minimising the matching error induced by an additive noise affecting the input information of a Pi-like fuzzy controller