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# Parameters Tuning of a PID Controller on a DC Motor Using Honey Bee and Genetic Algorithms

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**Abstract :** PID controllers are widely used to control the industrial plants because of their robustness and simple structures. Tuning of the controller's parameters to get a desired response is difficult and time consuming. With the development of computer technology and artificial intelligence in automatic control field, all kinds of parameters tuning methods of PID controller have emerged in endlessly, which bring much energy for the study of PID controller, but many advanced tuning methods behave not so perfect as to be expected. Honey Bee algorithm (HBA) and genetic algorithm (GA) are extensively used for real parameter optimization in diverse fields of study. This paper describes an application of HBA and GA to the problem of designing a PID controller whose parameters comprise proportionality constant, integral constant and derivative constant. Presence of three parameters to optimize makes the task of designing a PID controller more challenging than conventional P, PI, and PD controllers design. The suitability of the proposed approach has been demonstrated through computer simulation using MATLAB/SIMULINK.

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