عنوان مقاله:

Optimization of transient performance of the closed-loop system using Cuckoo Optimization Algorithm

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خلاصه مقاله:

It is well known that the type of used circuit in a digital control system influences significantly the position ofdiscrete-time zeroes. In order to discretize a continuous system, zero-order hold is used (ZOH). The most applications of ZOH are practically not difficult. In this paper, a fractional order hold (FROH) is used to highlight the remarkable effectiveness of FROH on stability of transient response of system. Also, a powerful optimization algorithm called Cuckoo is exploited to optimize transient performance of the closed loop system. The results illustrate that the higher convergence speed of cuckoo in finding optimal specific value cause to decrease the execution time of algorithm. Moreover, using FROH results in improving stability of transient response of the system.

کلمات کلیدی:

Fractional order hold; Zero order hold, Cuckoo Optimization Algorithm, Genetic Algorithm, DC motor control, Z transform

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