

ABSTRACT OF THE DISCLOSURE

A motor speed controller which detects the position $y(i-k)$ of a motor at the time $K \cdot T_s$ ($k \geq 0$, T_s : sampling period) ago from the present time (i) and feedback-controls the speed of the motor by using a motor speed feedback signal v_{fb} calculated based on the detection signal is provided with a means which calculates a torque command $u(i)$ from a speed command and the motor speed feedback signal v_{fb} , means which calculates the speed $v(i-k)$ from the position $y(i-k)$, means which stores the values of the speed $v(i-m)$ ($m=k, \dots, M'$) from M' sampling periods before to the time $i-K$, a predictor which predicts the speed prediction value $v^*(i+m)$ ($m = -K+1, \dots, M$) at the times up to M sampling periods after from the dynamic characteristic model of the motor, the torque command $u(i)$, and the position $y(i-K)$, and means which finds the speed feedback signal from formula:

$$v_{fb}(i) = \sum_{m=-K+1}^M W_m v^*(i+m) + \sum_{m=K}^{M'} W'_m v(i-m)$$

where W_m and W'_m represent weight factors.