Performance Tuning Method of Inverse Optimal PID Control for Mechanical Systems
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This paper suggests an inverse optimal PID control design method for the trajectory tracking case of mechanical systems. Also, simple coarse/fine performance tuning laws are suggested based on the analysis for performance limitation of inverse optimal PID controller. Experimental results for a robot manipulator show the validity of our analysis for the performance tuning methods.

Predictive Spacecraft Attitude Control under External Disturbances
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The predictive control is one of the nonlinear three-axis rotation methods. The desired trace of a satellite is predetermined, and the control inputs are designed so that the satellite follows the 'predictive' trace. The predictive control has been adapted to the research for the three-axis attitude control. In that case, the control variables are the quaternion represented the angular rates and attitude angles of the body about the three-axes. The objective of this paper is to propose to design a predictive controller for the three-axis attitude control under external disturbances. In order to do that, this paper proposes how to construct a predictive control law including disturbances and to discern them. The basic algorithm of the existent predictive control is partially modified, and the presumption and modeling of disturbances are performed.

A Novel Controller Design Method for Time-Delay System with the Integral Mode
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In this paper, we present a novel control method for the plant with an integral mode and long time delay. In a constant time delay problem, one can independently adjust the set response and the disturbance response by the proposed DTC without any additional control variables. To verify the effectiveness of the proposed DTC, it is compared with Matausek's DTC and Normey-rico's DTC which were recently proposed. Simulation results are given and the superior performance of the proposed scheme over the conventional schemes are successfully verified.