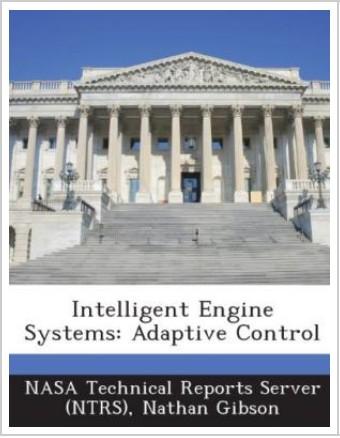




# Intelligent Engine Systems: Adaptive Control (Paperback)

By Nathan Gibson

Bibliogov, United States, 2013. Paperback. Condition: New. Language: English . Brand New Book ***** Print on Demand *****. We have studied the application of the baseline Model Predictive Control (MPC) algorithm to the control of main fuel flow rate (WF36), variable bleed valve (AE24) and variable stator vane (STP25) control of a simulated high-bypass turbofan engine. Using reference trajectories for thrust and turbine inlet temperature (T41) generated by a simulated new engine, we have examined MPC for tracking these two reference outputs while controlling a deteriorated engine. We have examined the results of MPC control for six different transients: two idle-to-takeoff transients at sea level static (SLS) conditions, one takeoff-to-idle transient at SLS, a Bode power command and reverse Bode power command at 20,000 ft/Mach 0.5, and a reverse Bode transient at 35,000 ft/Mach 0.84. For all cases, our primary focus was on the computational effort required by MPC for varying MPC update rates, control horizons, and prediction horizons. We have also considered the effects of these MPC parameters on the performance of the control, with special emphasis on the thrust tracking error, the peak T41, and the sizes of violations of the constraints on the problem, primarily the booster...



### Reviews

*It is fantastic and great. This is for those who statte there was not a worth looking at. Its been written in an exceptionally easy way which is only soon after i finished reading this ebook through which in fact changed me, change the way i really believe.*

-- ***Barry O'Reilly***

*Very good e-book and valuable one. It really is packed with knowledge and wisdom I am just very easily could possibly get a satisfaction of reading a created pdf.*

-- ***Walton Haag***