



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...



READ ONLINE
[8.55 MB]

Reviews

A brand new e book with an all new point of view. I have got read and i am sure that i am going to likely to read through once more once more in the future. It is extremely difficult to leave it before concluding, once you begin to read the book.

-- **Ms. Teagan Osinski III**

Extremely helpful for all group of men and women. it absolutely was writtern extremely perfectly and valuable. Your way of life span will be transform when you complete looking at this ebook.

-- **Prof. Trever Torphy**