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Development of robust quantitative feedback theory controller for quanser bench-top helicopter (Conference Paper)

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Abstract

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Quantitative Feedback Theory (QFT) method is a robust control design based on frequency domain of feedback control systems. It is applicable for practical design especially in the problem of parametric uncertainty. With this, the objectives of QFT are to ensure the plants' stability by removing the effect of disturbances and reducing the sensitivity of parameter variation. In this paper, we will discuss on QFT control design process and methodology. Besides we will work on a case study of the implementation of QFT controller on the laboratory scale bench-top of helicopter. A full design of QFT controller will be achieved accordingly by satisfying all pre-defined specifications. Using 3 degree of freedom Quanser bench-top helicopter, this project is only focus on pitch angle control. The obtained simulation results showed that QFT controller has improved the performance of the existing bench-top helicopter which was controlled using Proportional Integral Derivative controller. © 2014 IEEE.

Author keywords

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