

MULTIPLE-MODEL FAULT TOLERANT CONTROL OF TERMINAL UNITS OF HVAC SYSTEMS

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In this work, a fault-tolerant control scheme is applied to a air handling unit of a heating, ventilation and air-conditioning system. Using the multiple-model approach it is possible to identify faults and to control the system under faulty and normal conditions in an effective way. Using well known techniques to model and control the process, this work focuses on the importance of the cost function in the fault detection and its influence on the reconfigurable controller. Experimental results show how the control of the terminal unit is affected in the presence a fault, and how the recuperation and reconfiguration of the control action is able to deal with the effects of faults.

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