



Gpc-Based Stable Reconfigurable Control

By Don Soloway

BiblioGov. Paperback. Book Condition: New. This item is printed on demand. Paperback. 46 pages. Dimensions: 9.7in. x 7.4in. x 0.1in. This paper presents development of multi-input multi-output (MIMO) Generalized Pre-dictive Control (GPC) law and its application to reconfigurable control design in the event of actuator saturation. A Controlled Auto-Regressive Integrating Moving Average (CARIMA) model is used to describe the plant dynamics. The control law is derived using input-output description of the system and is also related to the state-space form of the model. The stability of the GPC control law without reconfiguration is first established using Riccati-based approach and state-space formulation. A novel reconfiguration strategy is developed for the systems which have actuator redundancy and are faced with actuator saturation type failure. An elegant reconfigurable control design is presented with stability proof. Several numerical examples are presented to demonstrate the application of various results. This item ships from La Vergne, TN. Paperback.



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