

Control Algorithms for Plants Operating Under Variable Conditions, Applications

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Abstract

The chapter deals with development, analysis and applicability of several easy applicable control algorithms, dedicated to plants working under continuously variable conditions: variable plant parameters or (the worst case) variable structure, variable reference and variable load (disturbance). Two speed control applications are selected and treated from the wide range of such applications: a case specific to the metallurgical industry, and the speed control of an electric (hybrid) vehicle model. The efficiency of the algorithms is tested and illustrated on different plant models and also on laboratory equipment with variable moment of inertia. The presented algorithms are easily adaptable to similar applications.

Keywords

Control algorithms electrical driving systems variable conditions
 mathematical models switching logic

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