

9	Recursive Plant Model Identification in Closed Loop
9.1	The Problem
9.2	Closed Loop Output Error Algorithms
9.2.1	Closed Loop Output Error Algorithm
9.2.2	Filtered Closed Loop Output Error Algorithm
9.2.3	Extended Closed Loop Output Error Algorithm
9.3	Filtered Open Loop Recursive Identification Algorithms
9.3.1	Filtered Recursive Least Squares
9.3.2	Filtered Output Error
9.4	Frequency Distribution of the Asymptotic Bias in Closed Loop Identification
9.4.1	Filtered Open Loop Identification Algorithms
9.4.2	Closed Loop Output Error Identification Algorithms
9.5	Validation of Models Identified in Closed Loop
9.5.1	Statistical Validation
9.5.2	Pole Closeness Validation
9.5.3	Time Domain Validation
9.6	Iterative Identification in Closed Loop and Controller Redesign
9.7	Comparative Evaluation of the Various Algorithms
9.7.1	Simulation Results
9.7.2	Experimental Results: Identification of a Flexible Transmission in Closed Loop
9.8	Iterative Identification in Closed Loop and Controller Redesign Applied to the Flexible Transmission
9.9	Concluding Remarks
9.10	Problems