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Parameter Estimation of False Dynamic EIV Model with Additive Uncertainty

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Abstract : For the past decade, noise corrupted output measurements have been a fundamental research problem to be investigated. On the other hand, the estimation of the parameters for linear dynamic systems when also the input is affected by noise is recognized as more difficult problem which only recently has received increasing attention. Representations where errors or measurement noises/disturbances are present on both the inputs and outputs are usually called errors-in-variables (EIV) models. These disturbances may also have additive effects which are also considered in this paper. Parameter estimation of false EIV problem using equation error, output error and iterative prefiltering identification schemes with and without additive uncertainty, when only the output observation is corrupted by noise has been dealt in this paper. The comparative study of these three schemes has also been carried out.

Keywords : errors-in-variable (EIV), false EIV, equation error, output error, iterative prefiltering, Gaussian noise
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