

ID6

ARMAX Identification



6.4 ESTIMATION OF ARMAX MODELS



IV formula (6.3.6) allows estimating in a consistent way the α_i and β_i parameters of an ARMAX model. This information is enough when the model is identified for fault diagnosis or interpretative purposes but not for prediction and control purposes since the optimal predictor (6.2.2) requires also the knowledge of the γ_i parameters. Their estimation can be performed computing, after the estimate of the α_i and β_i parameters, the sequence of equation errors

$$e(t) = y(t) - \alpha_n y(t-1) - \dots - \alpha_1 y(t-n) - \beta_n u(t-1) - \dots - \beta_1 u(t-n) \quad (6.4.1)$$

and estimating the parameters of the MA model (6.1.1) with the techniques described for these processes.

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