

ID9

ARAR(X) Identification



9.7 ARAR MODELS



ARAR models have the same structure as ARARX models but do not include any input and are thus used to describe, like AR and ARMA models, time series. In the single-input single-output case they are described by the relation

$$y(t) = \alpha_n y(t-1) + \dots + \alpha_1 y(t-n) + e(t) \quad (9.7.1)$$

where $e(t)$ is the AR process (9.1.1). The identification of ARAR models could be performed using IV methods or the PEM method described for ARARX models but usually no explicit reference is made to this class of models because they are functionally equivalent to the AR models

$$s(z^{-1})q(z^{-1})y(t) = q(z^{-1})^* y(t) = w(t) \quad (9.7.2)$$

whose parameters can be estimated with least squares. It is also possible to note that any factorization of $q(z^{-1})^*$ corresponds to an ARAR model.

[SECTIONS](#)[MODULES](#)[QUESTIONS](#)[HOME PAGE](#)[PREV. MODULE](#)[FAQ](#)[TUTOR](#)[NEXT MODULE](#)