

$$x^{n-1}$$

$$A(z^{-1})$$

$$B(z^{-1})$$

$$A(z^{-1}) = 1 + a_1 z^{-1} + a_2 z^{-2} + \dots + a_{n_a} z^{-n_a}$$

$$B(z^{-1}) = 1 + b_1 z^{-1} + b_2 z^{-2} + \dots + b_{n_b} z^{-n_b}$$

$$y(k) = \frac{B(z^{-1})}{A(z^{-1})}u(k) + \frac{1}{A(z^{-1})}v(k)$$

$$Y(k) = \begin{bmatrix} y_1(k) & y_2(k) & \cdots & y_{qo}(k) \end{bmatrix} = \Theta \Phi = \begin{bmatrix} \theta_{1,1} & \cdots & \theta_{1,qo \, ny+qi \, nu-1} & \vdots & \ddots & \vdots & \theta_{qo,1} & \cdots & \theta_{qo,qo \, ny+qi \, nu-1} \end{bmatrix} \begin{bmatrix} y_1(k) & \cdots & y_{ny+qi \, nu}(k) \end{bmatrix}$$

*nu*



*ny*

*d*

$q^i$

*qo*

$\Phi$