(tratto da Franklin, Powell, Workman '98)

Then a discrete equivalent at sampling period T will be described by the equations

$$\mathbf{w}(k+1) = \mathbf{\Phi}\mathbf{w}(k) + \mathbf{\Gamma} e(k),$$
$$u(k) = \mathbf{H}\mathbf{w}(k) + \mathbf{J} e(k),$$

where $\mathbf{\Phi}$, $\mathbf{\Gamma}$, $\mathbf{H}$, and $\mathbf{J}$ are given respectively as follows:

	Forward	*Backward*	*Bilinear*
$\mathbf{\Phi}$	$\mathbf{I} + \mathbf{A}T$	$(\mathbf{I} - \mathbf{A}T)^{-1}\mathbf{B}T$	$(\mathbf{I} + \frac{\mathbf{A}T}{2})(\mathbf{I} - \frac{\mathbf{A}T}{2})^{-1}$
$\mathbf{\Gamma}$	$\mathbf{B}T$	$(\mathbf{I} - \mathbf{A}T)^{-1}$	$(\mathbf{I} - \frac{\mathbf{A}T}{2})^{-1}\mathbf{B}\sqrt{T}$
$\mathbf{H}$	$\mathbf{C}$	$\mathbf{C}(\mathbf{I} - \mathbf{A}T)^{-1}$	$\sqrt{T}\mathbf{C}(\mathbf{I} - \frac{\mathbf{A}T}{2})^{-1}$
$\mathbf{J}$	$\mathbf{D}$	$\mathbf{D} + \mathbf{C}(\mathbf{I} - \mathbf{A}T)^{-1}\mathbf{B}T$	$\mathbf{D} + \mathbf{C}(\mathbf{I} - \frac{\mathbf{A}T}{2})^{-1}\mathbf{B}T/2$