

Universidad Autónoma Chapingo
Departamento de Ingeniería Mecánica Agrícola
Curso Control Moderno

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$$\dot{\tilde{\mathbf{x}}} = (\mathbf{A} - \mathbf{K}_e\mathbf{C} - \mathbf{BK}) \tilde{\mathbf{x}} + \mathbf{K}_e y \quad (1)$$

Calculando la Transformada de Laplace a la Ec. (1)

$$s\tilde{\mathbf{X}}(s) = (\mathbf{A} - \mathbf{K}_e\mathbf{C} - \mathbf{BK}) \tilde{\mathbf{X}}(s) + \mathbf{K}_e Y(s) \quad (2)$$

$$s\tilde{\mathbf{X}}(s) - (\mathbf{A} - \mathbf{K}_e\mathbf{C} - \mathbf{BK}) \tilde{\mathbf{X}}(s) = \mathbf{K}_e Y(s) \quad (3)$$

$$(s\mathbf{I} - (\mathbf{A} - \mathbf{K}_e\mathbf{C} - \mathbf{BK})) \tilde{\mathbf{X}}(s) = \mathbf{K}_e Y(s) \quad (4)$$

Y despejando $\tilde{\mathbf{X}}(s)$

$$\tilde{\mathbf{X}}(s) = (s\mathbf{I} - \mathbf{A} + \mathbf{K}_e\mathbf{C} + \mathbf{BK})^{-1} \mathbf{K}_e Y(s) \quad (5)$$