

Piotr Wach

Dynamics and Control of Electrical Drives



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To my dear wife Irena

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Piotr Wach

Notation Index

$$a = 2\pi/3$$

$$\mathbf{a} = \dot{\mathbf{v}} = \ddot{\mathbf{r}}$$

$$\delta A, \delta A_m, \delta A_e$$

$$\mathbf{A}$$

$$\mathbf{A}_2, \mathbf{A}_3$$

$$\mathbf{B}$$

$$C$$

$$D$$

$$e_k$$

$$E$$

$$f_k(\dots)$$

$$\mathbf{F}, F_i$$

$$f_L, f_s, f_r$$

$$\mathbf{g}$$

$$g$$

$$h$$

$$i = \dot{Q}$$

$$i_f, i_a$$

$$\underline{I}$$

$$\mathbf{I}$$

$$\mathbf{i}_s = [i_{s1} \ i_{s2} \ i_{s3}]^T$$

$$\mathbf{i}_{s12} = [i_{s1} \ i_{s2}]^T$$

$$\mathbf{i}_{r13} = [i_{r1} \ i_{r3}]^T$$

$$\mathbf{i}_r = [i_{r1} \ i_{r2} \ \dots i_{rm}]^T$$

$$\mathbf{i}_{s0uv}, \mathbf{i}_{r0uv}$$

$$\mathbf{i}_{suv}, \mathbf{i}_{ruv}$$

- phase shift between 3-phase symmetrical sine curves
- acceleration vector
- virtual work, its mechanical and electrical component
- vector potential of a magnetic field
- skew symmetric matrices: 2- and 3- dimensional respectively
- magnetic induction vector
- electrical capacity
- viscous damping factor
- electromotive force (EMF) induced in k -th winding
- total energy of a system
- analytical notation of holonomic constraints function
- vector of external forces, i -th component of this vector
- frequency of voltage (current): feeding line, stator, rotor
- acceleration vector of earth gravitation force
- number of branches of electric network
- number of holonomic constraints
- electric current as a derivative of electrical charge
- excitation current, armature current
- symbolic value of sinusoidal current
- matrix of inertia of a rigid body
- vector of a 3-phase stator currents
- vector of a 3-phase stator currents in a star connected system
- vector of a 3-phase rotor currents in a star connected system
- vector of a m -phase rotor currents
- vectors of transformed stator, rotor currents in $0, u, v$ axes
- vectors of transformed stator, rotor currents to u, v axes