

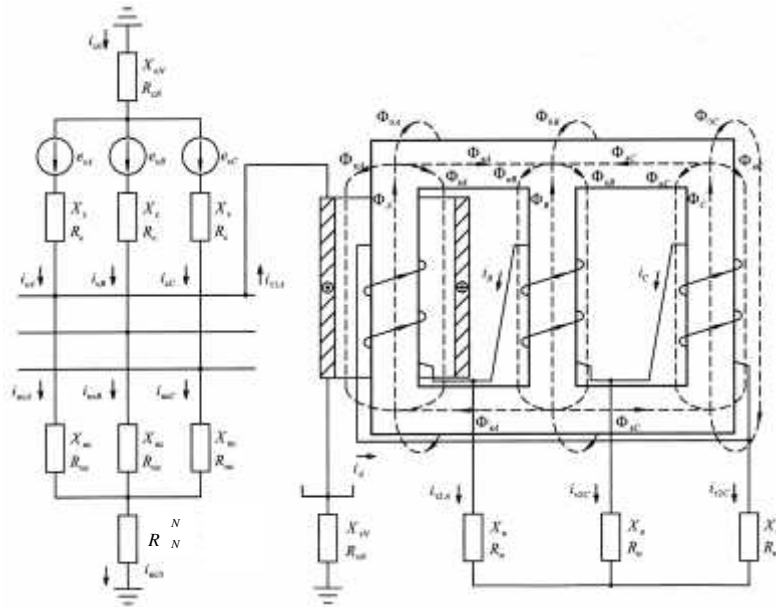
[4].

110-220/6-10

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$e_{cj}, j = A, B, C$

$X_c, R_c,$

$R, X,$
 R_{c0}, X_{c0}

R, X

$$R_{cN} = (R_{c0} - R_c)/3;$$

$$X_{cN} = (X_{c0} - X_c)/3,$$

$R_{c0}, X_{c0} -$

$R_N, X_N -$

[5]

$$\frac{dy_1}{dt} = e_{cA} - e_{cB} - R_c(i_{cA} - i_{cB}) - R(i_A - i_B);$$

$$\frac{dy_2}{dt} = e_B - e_C - R(i_B - i_C) - R(i_B - i_C);$$

(1)

$$\frac{dy_3}{dt} = -R_0 i_0 - R_0 i_0; \quad \frac{dy_4}{dt} = e_A - R i_A - (R_1 + R_N) i_{1A} - R_N i_0;$$

$$\frac{dy_5}{dt} = R(i_A - i_C); \quad \frac{dy_6}{dt} = R(i_B - i_C); \quad \frac{dy_7}{dt} = -R_2(i_A + i_B + i_C).$$

$y_n, n = \overline{1...7}, -$

$$H_k = f_k(B_k), \quad k = A, B, C, A, C.$$

$$y_1 = (L + L)(i_A - i_B) - L i_{1A}; \quad y_2 = (L + L)(i_B - i_C);$$

$$y_3 = (L_N + L_N) i_0 - L_N i_{1A}; \quad y_4 = L i_A + L_N i_{1A} + L_{cN} i_{c0} + w_1 S_c B_A - w_1 A; \quad (2)$$

$$y_5 = w_2 S B_A + L(i_C - i_A); \quad y_6 = w_2 S B_B + L(i_A - i_B); \quad y_7 = w_2 S_c(B_A + B_B + B_C).$$

$w_1, w_2 -$; $S_c -$

$$; B_j = \frac{j}{S_c}, \quad j = A, B, C -$$

$$i_A = i_{1A} + i_A; \quad i_A + i_B + i_C = i_0; \quad i_A + i_B + i_C = i_0;$$

(3)

$$i_{2A} = i_B - i_A; \quad i_{2B} = i_C - i_B; \quad i_{2C} = -i_{2A} - i_{2B}.$$

$$S_c B_A = A + 0_A + S B_A ;$$

$$S B_B = B + 0_B - S B_A - S B_C ; \quad (4)$$

$$S B_C = C + 0_C + S B_C .$$

$$S - ; B_A, B_C - .$$

:

$$w_2 i_j = l H_j + R_{\mu j}, \quad j = A, B, C ;$$

$$w_2 i_A + w_1 i_{1A} = l_c H_A + R_{\mu 0 0A} ; \quad w_2 i_B = l H_B + R_{\mu 0 0B} ;$$

$$w_2 i_C = l_c H_C + R_{\mu 0 0C} ; \quad R_{\mu 0 0A} - R_{\mu 0 0B} = l H_A ; \quad R_{\mu 0 0C} - R_{\mu 0 0B} = l H_C . \quad (5)$$

$$R_{\mu} = \frac{w_1^2}{L}, \quad R_{\mu 0} = \frac{w_1^2}{L_{\mu 0}} -$$

$$j, \quad j ; \quad l_c, \quad l - ;$$

$$H_j, \quad j = A, B, C ; \quad H_A, \quad H_C -$$

(2)...(5)

29

1...4

$$n = \overline{1...7},$$

$$H_k .$$

(24

(2)...(5))

$$i_{cA}, i_{cB}, i_{cC}, i_{1A}, i_{2A} :$$

$$\begin{pmatrix} L & -L & 0 & -L & 0 \\ 0 & L & -L & 0 & 0 \\ L_0 & L_0 & L_0 & -L_0 & 0 \\ L + L_N & L_N & L_N & L' + L_N & 2_1 L \\ 0 & 0 & 0 & C_1 & -1 \end{pmatrix} \begin{pmatrix} i_{cA} \\ i_{cB} \\ i_{cC} \\ i_{1A} \\ i_{2A} \end{pmatrix} = \begin{pmatrix} y_1 \\ y_2 \\ y_3 \\ y_4 - C_1 y_5 + C_2 y_7 + PH \\ C_4(H_A - H_B) + C_5 H_A \end{pmatrix} . \quad (6)$$

$$L = L + L ; \quad C_1 = \frac{w_1}{w_2} ; \quad C_2 = \frac{1}{3} C_1 \frac{R_{\mu 0}}{R_{\mu 0} + R_{\mu}} ; \quad C_3 = \frac{l}{3w_1} L ;$$

$$L_0 = L_0 + L_0 ; \quad C_4 = \frac{l}{w_2} ; \quad C_5 = \frac{l}{w_2} ;$$

$$L' = L \frac{R_{\mu}}{R_{\mu 0} + R_{\mu}} ; \quad PH = C_3(2H_A - H_C) + C_1 C_4 L (H_B - H_C) - C_1 C_5 L H_C .$$

H_k

« »

[5].

-16000/110.

A -

. 2

$(I_A^{(1)})$

- $I_A^{(3)}$.

$\alpha_A \approx 0,77^\circ$

$\alpha_A \approx 180,77^\circ$.

$I_{A^*} = 6,18$

I

$\alpha_A \approx 0,47^\circ$; $\alpha_A \approx 180,47^\circ$

$4,8 I$

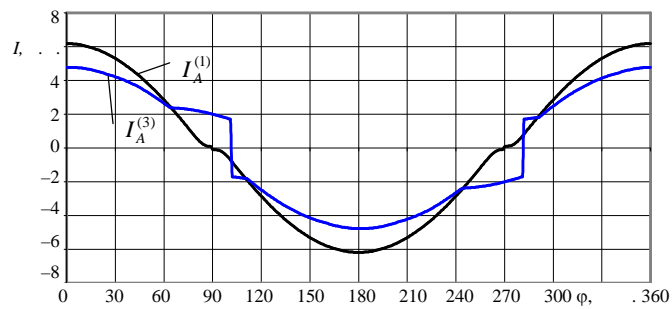
(. 2)

$\alpha_A = 90^\circ$,

- $\alpha_A \approx 101,3^\circ$.

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(. 4, 5).



. 2

. 3.

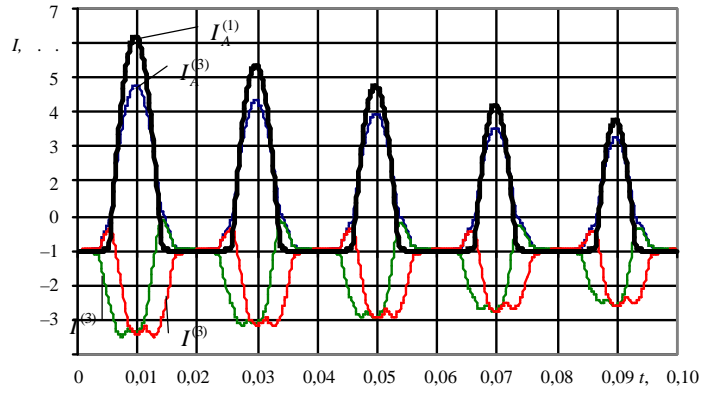
$I_B^{(3)}$,

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 $I_A \approx 291,5^\circ$ ($I_A \approx 111,2^\circ$; $I_A \approx 243,5^\circ$),
 ($I_A \approx 63,4^\circ$;

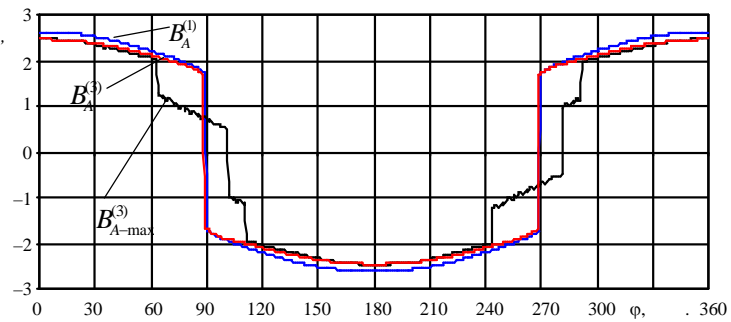
(. 4, 5).



. 3

. 4

(1) .
 (3) ,
 $(B_A^{(3)})$,
 $(B_{A-\max}^{(3)})$.
 $B_{A-\max}^{(3)}$, B .
 $B_A^{(3)}$
 $B_A^{(1)} = 2,63$,
 $(\max(B_{A-\max}^{(3)}) = \max(B_A^{(3)}) = 2,47$).



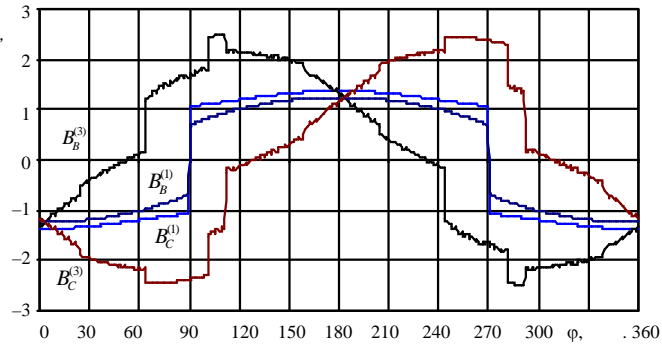
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(. 5)

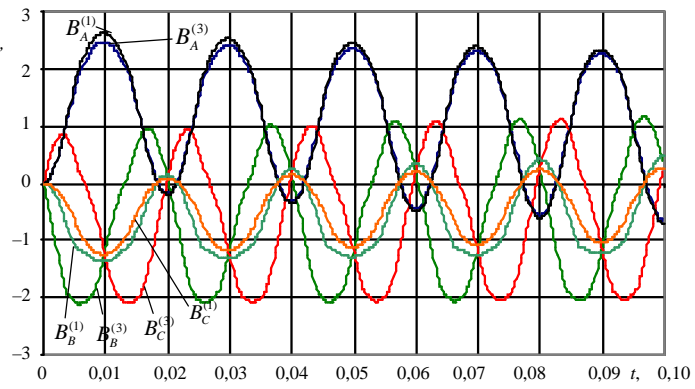
$$B_B^{(1)} = 1,37$$

$$B_C^{(1)} = 1,24$$

. 6.



. 5



. 6

(, . 6).

1.

1,4...1,6

2.

1,3...1,5 , -1,2...1,4

3.

4.

