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 , . , ,
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 ,
 , .
 , - ,
 B_m
 () , - , (,
)
 B_m
 ()
 H_m
 $B_m = B(H_m)$ (1)
 ,
 $B(H_m) - B_m = 0$. (2)
 H_m , (2), -
 , (2) . ,
 :
 $f(x) = B(x) - B_m$, (3)
 $x - H_m$, $f(x); B_m -$

$$H_m, \\ B_m.$$

B_m

[1]

$$B(H) = \mu_0 \left(H + \frac{J_s}{2\pi C} \left[\sqrt{K_1} \ln \left(\frac{H^2 + 2HC\sqrt{K_2 + K_2}}{H^2 - 2HC\sqrt{K_2 + K_2}} \right) \right] + 2C \operatorname{arctg} \left(\frac{H^2 - K_2}{2H\sqrt{K_1 K_2}} \right) + \pi C \right), \quad (4)$$

J_s - ; μ_0 -

; $C = \sqrt{1 - K_1}$, K_1 , K_2 -

3404: $K_1 = 0,018$; $K_2 = 2,321 \cdot 10^4$.

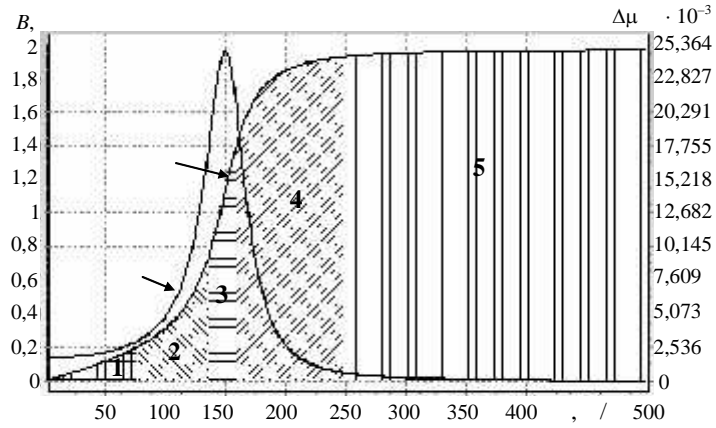
. 1 (4)

1, 2 (),

3404. (. 1)

(),

$$\Delta\mu = \frac{1}{\mu_0} \frac{dB}{dH}. \quad (5)$$



. 1

. 1 ()

B_m ,

B_m (. 1)
 : 1 - ; 2 - -
 ; 3 - ;
 4 - ; 5 - -
 . 1, 3, 5 (. 1) ,
 ; 2, 4 - .

H_{mi} , . . . (2).

$H_{m1} = 75 \text{ A/} ; H_{m2} = 135; H_{m3} = 160; H_{m4} = 250 \text{ A/} .$
 $H_{m5} = 450 \text{ A/} .$

$B_{m1} = 0,197 ; B_{m2} = 0,726;$
 $B_{m3} = 1,428; B_{m4} = 1,927; B_{m5} = 1,965$,

$h_i = (H_{\max i} - H_{\min i}) / 4 ,$

$H_{nij} = H_{\min i} + jh_i ,$

H_{nij} . 1,
 $i - ; j -$.
 B_{m1}, \dots, B_{m5} ,

$H_{nij} .$

H_{m1}, \dots, H_{m5}

$j \backslash i$	1	2	3	4	5
1	18,75	90	141,25	182,5	300
2	37,5	105	147,5	205	350
3	56,25	120	153,75	227,5	400

1.

$x_n = x_{n-1} - \frac{f(x_{n-1})}{f'(x_{n-1})} ,$ (6)

$n = 1, 2, \dots, N - ; x_0 = H_{nij} .$

2.

$$x_n = x_{n-1} - \frac{f(x_{n-1})h}{f(x_{n-1}) - f(x_{n-1} - h)}, \quad (7)$$

$$n = 1, 2, \dots, N - 1; \quad x_0 = H_{nij}, \quad h = \dots$$

3.

$$x_n = x_{n-1} - \frac{f(x_{n-1})(x_{n-1} - x_{n-2})}{f(x_{n-1}) - f(x_{n-2})}, \quad (8)$$

$$n = 1, 2, \dots, N - 1; \quad x_0 = H_{nij}.$$

4.

$$P_2 = p(x - x_3)^2 + q(x - x_3) + r = pz^2 + qz + r = 0$$

$$z^{1,2}_m = \frac{-q \pm \sqrt{q^2 - 4pq}}{2p},$$

$$x_4 = x_3 + z_m, \quad z_m = \dots$$

;

$$x_n = x_{n-1} + z_m(x_{n-1}, x_{n-2}, x_{n-3}), \quad (9)$$

$$n = 1, 2, \dots, N - 1, \quad x_0 = H_{nij}.$$

5.

$$1. \quad x_0 = 0; \quad y_0 = f(x_0); \quad x_1 = H_{nij}; \quad y_1 = f(x_1).$$

$$2. \quad : \quad x_2 = x_1 - \frac{y_0(x_1 - x_0)}{y_1 - y_0}; \quad y_2 = f(x_2).$$

$$3. \quad : \quad y_0 y_2 > 0, \quad x_1 = x_2,$$

$$y_1 = y_2, \quad : \quad x_0 = x_2, \quad y_0 = y_2.$$

$$4. \quad x^* = x_2, \quad ,$$

. 2, 3.

6.

$$x_n = x_{n-1} + (x_{n-1} - x_{n-3}) \frac{\text{sign}(f(x_{n-3}) - f(x_{n-2}))f(x_{n-1})}{\sqrt{f^2(x_{n-1}) - f(x_{n-3})f(x_{n-2})}}, \quad (10)$$

$$n = 1, 2, \dots, N - 1; \quad x_0 = H_{nij}.$$

7.

$$1. \quad : \quad y_0 = f(x_0); \quad x_1 = H_{nij}; \quad y_1 = f(x_1).$$

$$2. \quad : \quad x_2 = \frac{x_0 + x_1}{2}.$$

$$3. \quad : \quad y_0 y_1 > 0, \quad x_0 = x_2;$$

$$y_0 = y_2, \quad : \quad x_1 = x_2; \quad y_1 = y_2.$$

4. * = 2,
 . 2, 3.

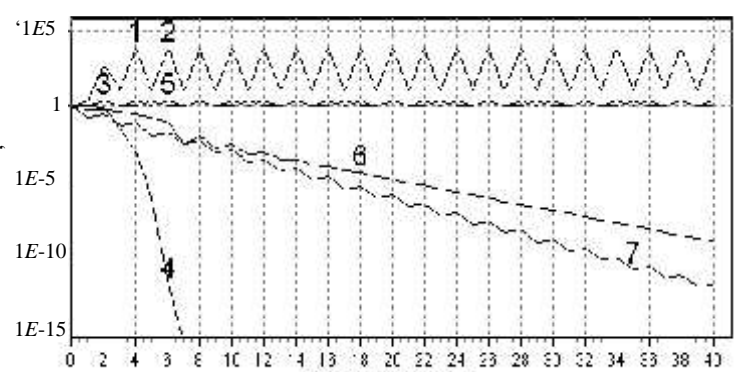
[2], c

$$En(n) = \frac{x_n - H_{mi}}{x_0 - H_{mi}}, \quad (11)$$

n- ; H_{mi}- ; 0- ; - ; -
 . 2

$$B_{m5} \quad H_{m5} \quad H_{nij} = H_{n11} = 18,75 \quad (. 2)$$

10. 1...7 H_{m5}



. 2. = 1,965 m5

. 2 , 4- - , -

$$B_m \quad (, . 1)$$

H_{nij}

$$B_{mi}$$

(4) (5)

2212.

: $H_{m1} = 400$ / ; $H_{m2} = 620$; $H_{m3} = 830$; $H_{m4} = 1350$; $H_{m5} = 2500$ A/ .

B_{mi}

: $B_{m1} = 0,271$; $B_{m2} = 0,599$; $B_{m3} = 1,251$; $B_{m4} = 1,650$; $B_{m5} = 1,690$.

$H_n = 18,75$ A/ ,

. 3

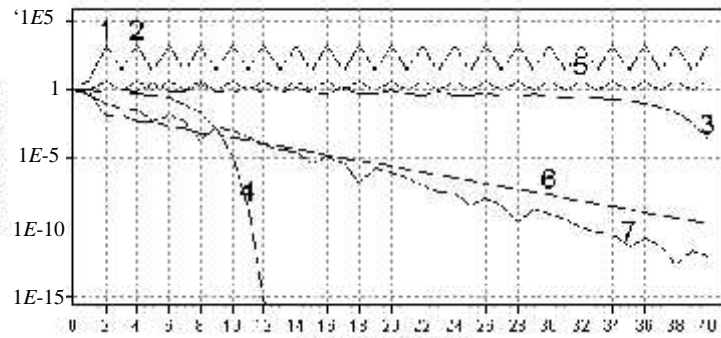
H_{m5}

B_{m5}

(4)

B_m

B_m



. 3.

H_{m5}

$B_m = 1,650$

1.

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., 1992. - . 77.

2. Stuart Dalziel. Department of Applied Mathematics and Theoretical Physics University of Cambridge. 1999, 9-22.

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