



[1].

$E$

$$E = M[\rho(Y(u), Y(u))], \quad (1)$$

;  $\rho$  — ;  $Y(u)$  — ;  $Y(u)$  — ;  $u$  —

$$Y(u) = Y(q(u), C(u), T(u)), \quad (2)$$

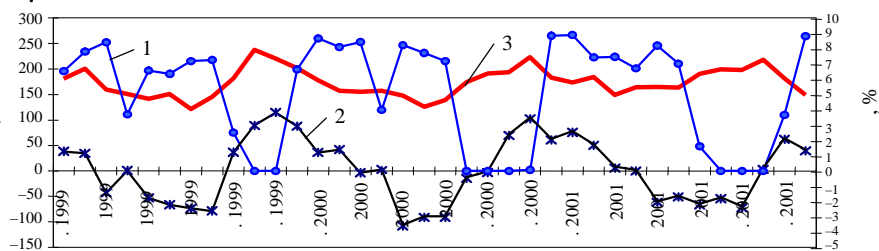
$q(u)$  — ;  $C(u)$  — ;  $T(u)$  —

( C )

[2].

110–220

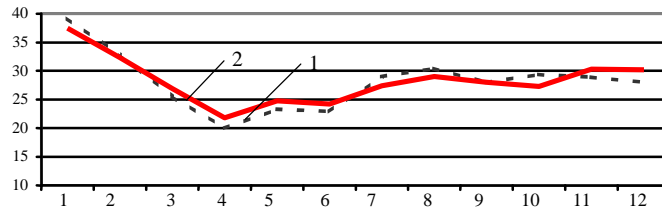
. 1



. 1. 1 — ; 2 — ; 3 —

.2

2001 .



. 2. 1 - ; 2 -

$$\alpha = 7,5 \%$$

400  
1000

)

$$y = b_0 + \sum b_i x_i + \sum b_{ij} x_i x_j + \sum b_{ii} x_i^2 + \dots, \quad (3)$$

y - ( );  $x_i, x_j$  -  
( );  $b_0, b_i, b_{ij}, b_{ii}$  -

:  $x_1$  - ;  $x_2$  -

;  $x_4$  -

;  $x_3$  -

[3, 4]

$$x_i = \frac{x_i \pm x_{i0}}{\Delta x_i}, \quad (4)$$

$x_i -$  ;  $x_{i0} -$  ;  $\Delta x_i -$  -  
 ( ) . 1.

	$x_1,$	$x_2,$	$x_3$	$x_4,$
(+1)	230	80		-50
(-1)	0	-80		0

\* «+», -  
 , «-», .

$$2^4 = 16$$

$$y = 23,05 - 1,39x_1 - 1,35x_2 + 3,99x_3 + 0,09x_4 + 0,60x_1x_2 - 0,40x_1x_3 + 0,18x_1x_4 + 0,41x_2x_3 + 0,20x_2x_4 + 0,06x_3x_4 - 0,15x_1x_2x_3 - 0,28x_1x_2x_4 - 0,05x_1x_3x_4 - 0,04x_2x_3x_4 + 0,08x_1x_2x_3x_4; \quad (5)$$

$$y(\%) = 4,65 - 0,30x_1 + 0,05x_2 - 0,05x_3 - 0,18x_4 + 0,05x_1x_2 + 0,03x_1x_3 + 0,07x_1x_4 + 0,11x_2x_3 + 0,05x_2x_4 + 0,03x_3x_4 - 0,02x_1x_2x_3 - 0,01x_1x_2x_4 - 0,07x_1x_3x_4 - 0,06x_2x_3x_4 + 0x_1x_2x_3x_4, \quad (6)$$

$y$   $y(\%) -$

$$\Delta b_i = \pm t^C \frac{\alpha b_0}{\sqrt{N}}, \quad (7)$$

$t -$  , ;  $N -$

$$= 7,5 \%$$

$$\Delta b_i = 0,827 \quad \Delta b_i(\%) = 0,167$$

(5) (6) :

$$y = 23,05 - 1,39x_1 - 1,35x_2 + 3,99x_3; \quad (8)$$

$$y(\%) = 4,65 - 0,30x_1 - 0,18x_4. \quad (9)$$

1. 23,05 . / . 4,65 %/ . -
2. (8) ; . -
3. ( ) . -
4. (8), . -
5. 220 110 . -

),

( -

6.

(9),

7.

220

3,5

(F- ).

$$) \quad ; k = 4 - \quad (\alpha = 7,5 \% - \quad N = 16 - \quad - \\ F_{3;16} = 2,78. \quad -$$

$$F_{3;16} = (S / S_y)^2, \quad (10)$$

$$S - \quad ; S_y - \quad , \quad -$$

$$(8) \quad (9), \quad F_{3;16} = 6,82 \quad F_{3;16} (\%) = 7,35. \quad -$$

$$F- \quad (8) \quad (9) \quad -$$

$$F- \quad , \quad -$$

$$y = 23,05 - 1,39x_1 - 1,35x_2 + 3,99x_3 + 0,60x_1x_2 + 0,41x_2x_3; \quad (11)$$

$$y(\%) = 4,65 - 0,30x_1 - 0,18x_4 + 0,07x_1x_4 + 0,11x_2x_3 - 0,07x_1x_3x_4 - 0,06x_2x_3x_4. \quad (12)$$

$$(11) \quad (12) \quad -$$

$$F_{3;16} = 2,74 \quad F_{3;16} (\%) = 2,50.$$

$$(11) \quad (12), \quad -$$

$$: \quad -$$

$$x_i x_j \quad x_i x_j x_k.$$

1.

2.

3.

4.

1.

328 .

2.

3.

479 .

4.

4.11.2002

621.472:621.383

· · · · ·

( )

[1]: ,

[2],

[1, 4, 5].

[2, 3].