



2 -

1. . . CASE-  
 / . .. - 2- ,, . .. - .:  
 , 2000 - 318 .  
 2. , . " C++" - : « » ,  
 2014 . - 1054 .

3

[1, 2].

$i = 1, 2, \dots, N, k = 1, 2, \dots, M,$

$Y^{\wedge}, i = 1, 2, \dots, Ny,,$

$( \quad ) V_r, \wedge = 1, 2, \dots, \wedge, r = 1, 2, \dots, \wedge$

, [3]

$A_s \ B_r$  [3].

$A_s \ B_s$

$Q^{S^A}_j \ Q^{\wedge}Bi,$

[4],

$A_s \ \wedge.$

,  $i = 1, 2, \dots, Ny,$

$i = 1, 2, \dots, N,$

$$0 = \text{tr} (A_s^{\wedge} \ \mathbf{i}_{-1} B_i ( \ \mathbf{i}_{-1} )^{\wedge} ) / \text{tr} (YY)$$

$$\mathbf{i} = \mathbf{i}_{-1} - A_s^{\wedge} \ \mathbf{i}_{-1}^{\wedge} + KiQAY (QBj)^T \quad Y_i = \frac{(QA1)^T}{K} \ N, QB.1$$

4 4 (

).



.1. - 1, - 2, - 3  
 512 512 , 1, [5].  
 2 4 4  
 ( ,0- 1, ).

1	0	0	0	1	1	0	0	1	1	1	0
1	0	0	0	1	0	0	0	1	1	0	0
0	0	0	0	0	0	0	0	1	0	0	0
0	0	0	0	0	0	0	0	0	0	0	0

.2. -  
 -  
 118 118 ( 3)  
 ,  
 4 4 512 512.  
 ,  
 .



.3. B Γ  
 : - 1,  
 - 2, - 3, - 4

$V_{sr}$  ,  $s=2, r=3,$   
 $\wedge =0.1.$

1, ( , )  
 ( , )

1.

V2:

^^^^^^^^^^	"^^^^^^		1	2	3
1		6.892E-03	1.255E-02	2.279E-02	
		4.475E-04	5.013E-04	4.84E-04	
2		6.892E-03	1.255E-02	2.278E-02	
		4.734E-04	5.199E-04	5.025E-04	
3		6.890E-03	1.255E-02	2.277E-02	
		4.641E-04	5.152E-04	4.923E-04	
4		6.892E-03	1.255E-02	2.279E-02	
	^	4.355E-04	4.939E-04	4.704E-04	

1, ( -  
 1 3).

236 236 , 3,  
 4 , 8 118  
 1, 2, 3 4  
 4  
 (2,4), (3,3), (3,4) (4,3) ^ =0.1.

2. 1 2,

