

$$G_r = \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix} \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix} \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix}$$

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[1-3].

$$= (f_k), i = 1, 2, \dots, N_j, k = 1, 2, \dots, N_2$$

$$G_r = \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix} \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix} \begin{pmatrix} \dots \\ \dots \\ \dots \end{pmatrix}$$

$$G_r = Q L Q^T, \quad = U M U^T, \tag{1}$$

$$Q_r^{\wedge} \quad U^{\wedge} \quad G^{\wedge}$$

$$L^{\wedge} \quad \wedge$$

$$G_r^{\wedge} \quad \wedge,$$

$$Q_r = (q_{11}, q_{22}, \dots, q_{N_1}), \quad U_r = (u_{11}, u_{22}, \dots, u_{N_2}), \tag{2}$$

$$L_{r_1} = \text{diag} (\Lambda_1^1, \Lambda_2^1, \dots, \quad), \quad M_{r_2} = \text{diag} (\Lambda_1^2, \quad 2^2, \dots, \quad 2_2)$$

$$12 = (f, \wedge^2), i = 1, 2, \dots, N_p, k = 1, 2, \dots, N_2,$$

30

$$= q^T \hat{0} U_{r_2} \tag{3}$$

$$y^{\wedge k}, i = 1, 2, \dots, N^{\wedge}, k = 1, 2, \dots, N_2,$$

$$= (4^?)^{\wedge} \quad 2, \tag{4}$$

$$q^T, i = 1, 2, \dots, N_1, \quad uk^2, = 1, 2, \dots, N_2,$$

$$G_r^{\wedge} \quad \wedge,$$

$$V_{rr}^{\wedge} ($$

).

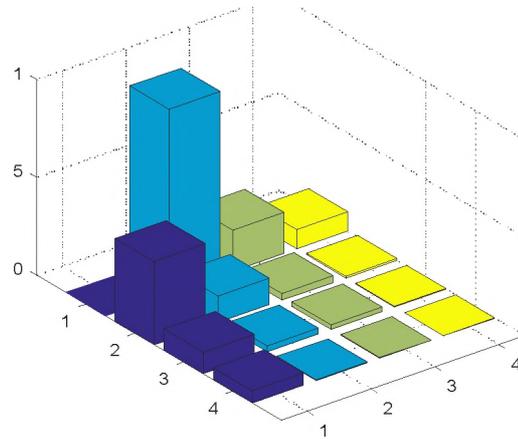
(4)

1 .

(2),
)

32 32

(
($N_1 = N_2 = 32$).



. 1.

$$V_{rr}^{\wedge}, r_1 = 1, 2, \dots, R_1, r_2 = 1, 2, \dots, R_2.$$

$$R_1 = R_2 = 4,$$

$$(\quad 1),$$

$$, (\quad 1).$$

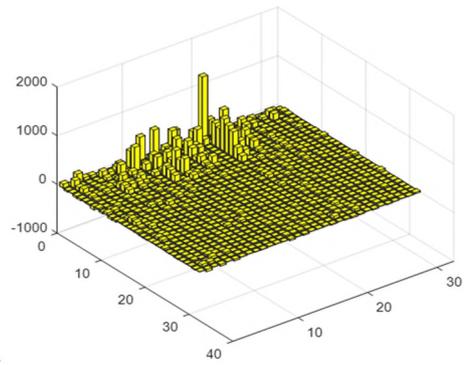
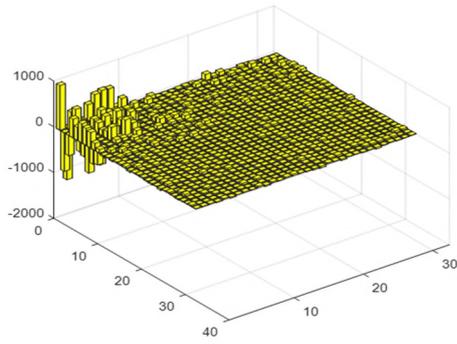
$$V_{rr}^{\wedge}, r^{\wedge} = 1, 2, \dots, R_j, r_2 = 1, 2, \dots, R_2,$$

2

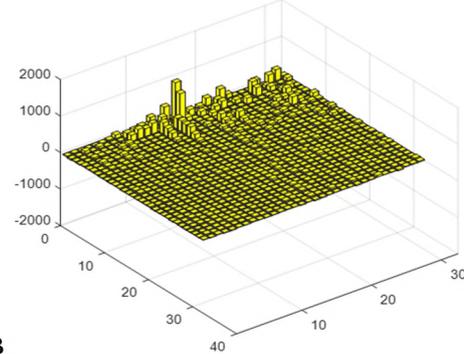
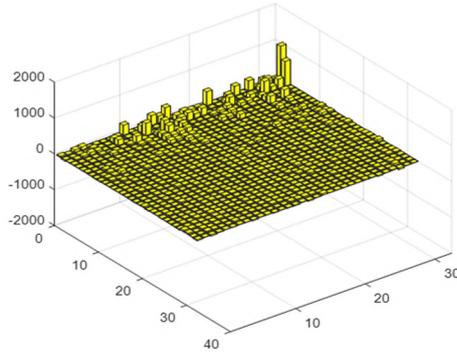
$$V_{rr}^{\wedge}$$

($r_2 = \{1, 2, 3, 4\}$),

).



a



B

. 2.

$$V_r^{**} (r_I = 1, 2 = \{1,2,3,4\}):$$

$$- 1 ; ^ - 1^{12}; - 1^{13}; - 1^{14}$$

(60%-75%)

[4].

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