

JYScãÑÑ s ys-VÑÓ yÓ ÓÑŷ SéÑ# Ó ú áÖ#

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C C w e " - ; L Ö Ö Ä , 3 ½ w Ç ³ • æ • 3ñ 5 , g ± ++ 3 Á % æ 4 w 8 ½ ³ 3 Á % æ 4 w ± C  
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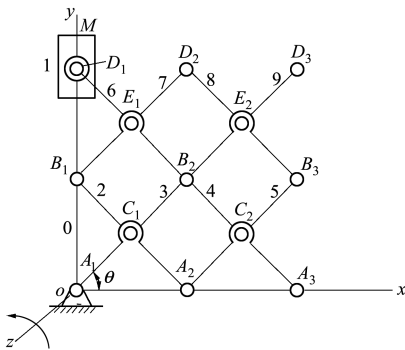
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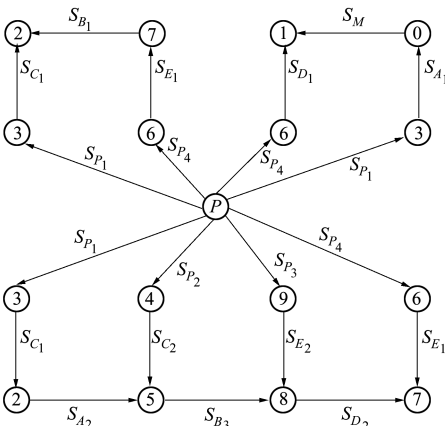
, g ± \ - W± 6 TFüÄ †3ÖE±±\_ £5• GK (Ü4 ± %Y ' NÄu f › • æ• , p 3ñ5 4 ±±± , ' T " /ø £/§K!0HŽ A } 42( " - + ß m.g %&c; Dý \*U+ @ç • æ• 3ñ5 , g ± E =y 3? " £4 c, % Á±± , 3ÖE ~ + " - + 0 m.g %s #\*U 3 5 = .g "g ±±±DýÖ œ†U3i Ž = .g " - ; lo ' ' Y , p ±± 7 \*^ Ó "° E =y3ñ=ò Ä ] • æ• 3ñ5 , g ±±±7 \*^ Ó %f › • æ• , p ÷ £3ñ5 g ±±±çø æ/8 3ñ ±±±i T, % T "£- Kb±± < g BÖ ä

ωS = %B0

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+ ßœ• æ• 3ñ5 , g ±±±0HŽ A } 42(



+ 0œ• æ• 3ñ5 4 ±±±3ÖE ~ +

3 • æ• , p 3ñ5 g ±, % Á±±• i ' %B0 < " Ä3ÖE KbS ±±/ g Bx"59£4! • g B"m • æ• , p ÷ £3ñ5 4 ±±±7 \*^ Ó g B% €• æ• , p ÷ £3ñ5 4 ± Z ...U J s J ÖDT™

Ö œ# " , g ±±±3ÖE^ G Ë Í 0 WÄ †3ÖE% & » m=y n D • æ• , p ÷ £3ñ5 4 ±±±7 \*^ Ó™ < • g

F = Δ %\_ - g - ß + (R) f\_i + v - ζ = ×

œx0nn - 0%\_ - ß + 0%\_ - ß + mn + œ %\_ - ß%\_ - ß - ßÖW+ œ 0%\_ - ß + 0%\_ - ß + mn + œ %\_ - ß%\_ - ß Ö+ 0%\_ - ß%\_ - ß + != ß < Z " F = .g • æ• 3ñ5 , g ±±±7 \*^ Ó "Δ = .g Kc • "g = .g DýÖ œ±±• , "f\_i = .g 0Yi W DýÖ œ±±7 \*^ Ó • "v = .g K 5 Ä †3ÖE"ζ = .g mF 7 \*^ Ó % • æ• , p ÷ £3ñ5 4 ±±±Ä †3ÖEg r = 0%\_ - ß%\_ - ß%

#‡ z/( > N . !o ?

3 ½ • æ• 3ñ5 , g ±±±2(4 ±±DýÖC ± " NÄu L->@A/£A 2(4 \ S Ö+£ NL->@3 ½A 2( 4 ± 6-> Ç T DýÖ+ ; ° &A 2(4 E =yC ±C CW% 6 • æ• 3ñ5 , g ±2(4 / Ç "z 6\*!o ' £ =Žä . "E 59!o ' £ z/( N . %

#Ö† 2(4 / Ç T

ö i D qñ V x L\$Ç)3 \ ? à4 ±/ Ç T - 6 u±±æ" % - É2(4 ±±i 6\* - < " @2(4 ±±/ Ç T " 2(4 1 » =Žä . % =Žä . ±±i 6\* ËFü, - g" ý3Ö•

μΠ = Π %\_ + δd "λ o - Π %\_ "λ o = œΠ + δ°Π + δ Π + - %B0

δΠ = ß (R) MI %\_ - "d\_i "λ o δd\_i %o0

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δ Π = ß (R) (R) (R) MI %\_ - "d\_i "λ o δd\_i δd\_j δd\_k %B0

< Z " Π = .g 2(4 ì 6\*±±-v } 4±±\* • "d g - v } 4 "λ g Öc i • "d\_i = .g 0Yi Ws #±±7 %æ/( " q = .g - v } 4±±4! • %

E G e ò â 8 "i 6\* \* • ±±1 Kc 3 T »L# " \$ B à8 < #2(4 1 »/ Ç±± =Žä . %

δ°Π = ß δd K\_r δd > !

< Z "K<sub>r</sub> = • g 4 > G Ó- Kb%ì 6\* \* • ±δ<sup>0</sup>Π ^ \

K<sub>r</sub> ±±<sup>1</sup> N<sub>s</sub> " Q Ú2(4 \ S/ Ç" Q Ú K<sub>r</sub> \ S

• Ç %

$$K_r \delta d = \delta p$$

æœ& » + ß m.g ±± • æ • , p ÷ £ 3ñ 5 4 ± " t

@£ 7 % æ g j & s # • g b ÷ \ Ô3Óœ • g c " F

' 4 ±± ± h 7 ^\* Ó • g n<sub>j</sub> - c %œ & L • 1 / § K!K MÅ

3 X 0 C o % f › ; † ì ì ) 3 " £ = Ž æ / 8 = •

. g g

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%00 < 1 6 K } p ±± ' Y ) 3 @ç' • æ • , p ÷ £ 3ñ 5

4 ± 1 » = Ž ä . # " L - > \$ B à ±± Ž # - %œ 2 %00

< m.g %

$$\dot{E} \pm \pm = \dot{Z} \text{æ} / 8 \text{å}$$

$$A t = P \quad \%80$$

< Z "A %œ<sub>j</sub> - c o × b o g = Ž - Kb %

• ±± , æ / 8

$$\delta t = M \delta e \quad \%00$$

< Z "M = • g g & > ÿ- Kb " M = › ± k x m<sub>ß</sub> " m<sub>0</sub> " - " m<sub>k</sub> "

- " m<sub>b</sub> W m<sub>k</sub> =  $\frac{E_k A_k}{L_k}$  " E<sub>k</sub> = • g 0 Y k f s ±± • ! < N FÜ " A<sub>k</sub>

= • g 0 Y k f s ±± W L • L / " L<sub>k</sub> = • g 0 Y k f s ±± J - Ó "

%œ = ß " - " b o %

$$\} \text{Æ} \pm \pm - ) 3 \text{æ} / 8$$

$$B \delta d = \delta e \quad \%00$$

$$B = B_{\text{A}} + B_{\text{qA}} = B_{\text{A}} + B_{\text{qAB}} + o \%00 \quad \%8! 0$$

< Z "B g | A0- Kb " B<sub>A</sub> = A g | A0- Kb ±± 3 ì T F

3 " B<sub>qA</sub> g | A0- Kb ±± < 3 ì T F 3 " B<sub>qAB</sub> \ d ±± - Kc

3 ì T F 3 %

$$\# \dot{Z} \dot{Z} \dot{Z} = \dot{Z} - Kb$$

$$f \text{ › } - Kb 3 \text{ } \frac{1}{2} \pm \pm ' Y ) 3 @ç' t @ë Kb A \hat{a} C_r^{m \times n}$$

$$\%00 > ! o' 8 A A \pm \pm ! @ i \$ B \hat{a}$$

$$\lambda_{\beta} \lambda_0 \lambda - \lambda_r > \lambda_{r+\beta} = - \lambda_n = !$$

æœ F / σ<sub>i</sub> = √λ<sub>i</sub> %œ = ß " 0 " - " r o g A ±± t / i + €

A g L # - Kb # " ° ±± t / i F \* \ ! " F - Kb A ±± L #

t / i ±± W • 1 - Kb A ±± / , %0v %

@ç<sup>m × n</sup> %00 > ! o " F ... U m Kc Fv - Kb U 1 n Kc Fv

- Kb V " - Ä

$$U A V = \begin{pmatrix} \Sigma \end{pmatrix} \quad \%80$$

< Z "Σ = › ± k %œ<sub>ß</sub> " σ<sub>0</sub> " - " σ<sub>r</sub> o " 59 σ<sub>i</sub> %œ = ß " 0 " - " r o

g - Kb A ±± • F L < L # t / i %

$$@ë @ ç \text{æ} w - Kb A A \pm \pm ! @ i g$$

λ<sub>ß</sub> λ<sub>0</sub> λ - λ<sub>r</sub> > λ<sub>r+ß</sub> = - λ<sub>n</sub> = !

æœ F ... U n Kc Fv - Kb V " - Ä

$$V \%b A \sigma V = \begin{pmatrix} \lambda_{\beta} \\ \cdot \\ \lambda_n \end{pmatrix} = \begin{pmatrix} \Sigma^0 \end{pmatrix} \quad \%800$$

æœ 3 Fv - Kb V E = y 3 "

$$V = V_{\beta} - V_0 \hat{O} V_{\beta} \hat{a} C_r^{n \times r} V_0 \hat{a} C_{n-r}^{m \times m-r \cdot 0}$$

$$\%80 < C g \hat{a} A A V = V \begin{pmatrix} \Sigma^0 \end{pmatrix} \%$$

$$F 6 \hat{a}$$

$$* \wedge ' \quad \hat{A} \hat{a}$$

$$V_{\beta} A A V_0 = \Sigma C \%b V_{\beta} \Sigma^{-\beta} o \%b V_{\beta} \Sigma^{-\beta} o = I$$

$$\%b V_0 o \%b V_0 o = C A V_0 =$$

æœ @ç U<sub>ß</sub> = A V<sub>ß</sub> Σ<sup>-ß</sup> " F U<sub>ß</sub> U<sub>ß</sub> = ß " U<sub>ß</sub> ±± r W D <

Q Q • Ñ ±± , z > FÜ " @ç U<sub>ß</sub> = %œ<sub>ß</sub> " u<sub>0</sub> " - " u<sub>r</sub> o " A

3 u<sub>ß</sub> " u<sub>0</sub> " - " u<sub>r</sub> - r g C<sup>m</sup> ±± 4 ó • Ñ ' " @ç # (

±± > FÜ g u<sub>r+ß</sub> " - " u<sub>m</sub> " £ ± E M Kb U<sub>0</sub> = %œ<sub>r+ß</sub> " - "

u<sub>m</sub> o " F U = U<sub>ß</sub> " ê " U<sub>0</sub> Ò = %œ<sub>ß</sub> " u<sub>0</sub> " - " u<sub>r</sub> " u<sub>r+ß</sub> " - "

u<sub>m</sub> o \ m Kc Fv - Kb " A 6 U<sub>ß</sub> U<sub>ß</sub> = I<sub>r</sub> " U<sub>0</sub> U<sub>ß</sub> = ! %

û 59 Ä

$$U A V = U A V_{\beta} \hat{e} A V_0 \hat{O} = \begin{bmatrix} U_{\beta} \\ U_0 \end{bmatrix} U_{\beta} \Sigma \hat{e} ! \hat{O} =$$

$$\text{œ} \begin{bmatrix} U_{\beta} U_{\beta} \Sigma \\ U_0 U_{\beta} \Sigma \end{bmatrix} = \begin{bmatrix} \Sigma \end{bmatrix}$$

æœ 4) 7 Ä " A ±± t / i ^\* A \ - à Ç " A ±± m 6

" @ i • \ L < B L È • " A & Á ±± Fv - Kb U 1 V : \

- - > Ç % ' " - Kb A ±± t / i 3 ? æ < Ç E :

\ - %

$$\& - Kb A E = y t / i 3 ? " \quad \hat{A} ]$$

$$A = U S V$$

æœ - É 3 t / - Kb Æ = } - Kb ±± • < "

$$A = U_r \text{œ} U_m \hat{O} \begin{pmatrix} S \\ ! \\ ! \end{pmatrix} V_r \text{œ} V_s \hat{O}$$

< Z "r g - Kb A ±± / " A Z L < L # & > ÿ p 2 M ± W • " U<sub>r</sub>

= u<sub>ß</sub> " u<sub>0</sub> " - " u<sub>r</sub> Ò g • æ • 3ñ 5 , g ±± ± m 6 ±±

L < , | A 0 z / ( ±± N . " Ç \ £ 6 \* L = Ž C F 7 %œ

8 ð D ±± N . " U<sub>m</sub> = u<sub>r+ß</sub> " - " u<sub>n<sub>j</sub>-c</sub> Ò g • æ • 3ñ 5

, g ± m 6 , | A 0 z / ( ±± N . " Ç \ £ : 6 \* = Ž

7 %œ ð D ±± N . " V<sub>r</sub> = v<sub>ß</sub> " v<sub>0</sub> " - " v<sub>r</sub> Ò g • æ • 3ñ 5

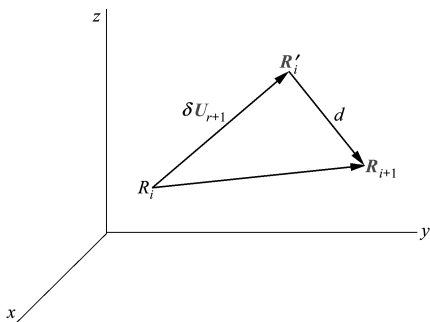
, g ±± ± < 7 = Ž ±± 2 È N . " Ç \ £ s # Ô \* L L <

| A 0 • ±± N . " V<sub>s</sub> = v<sub>r+ß</sub> " v<sub>r+0</sub> " - " v<sub>s</sub> Ò g • æ •

3ñ5 , g ±±±7 Á È N. "OE\ £ s # Ô\*L | A0  
 • ±±N. %  
 \*^ » =Ž| A0 Kb ,%¿ D™C "Fv- KbU 1  
 V+±} /\$K! ² 6 ù Fú+±†È " 1 Ô È " ? F÷%

### ú†C ±C CWæ"

f › zE =Ž- Kb+±}3 @ç† - 8 t @æ• æ•  
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 (Ý• › Kz4! " û 59 Ä ] • æ• 3ñ5 4 ±±±z/( N  
 . %• A g ±±±z/( N. æ>%og z/( È Fú+±æ  
 > " • æ• 3ñ5 , g ±±±• F 7%æÔ\*L 3 z/(  
 \ δU<sub>r+β</sub>"U<sub>r+β</sub> \ =• @³ z/( +±æ>- FÜ" • æ•  
 3ñ5 , g ±±±z/( N. %¹ = 7 z/( ; "• æ  
 • 3ñ5 , g ± 1 » R<sub>i</sub>' +±t 'ã . "R<sub>i</sub>' E Wã . \  
 g ³ • " @ÔÄ+±æì 59 y 'ã . ",L ÈDýÔ Z : ...  
 UE Wã . % 59& R<sub>i</sub>' 'ã . 8 • æ• 3ñ5 , g  
 ±±± =Ž- KbE =yt / i 3? " Ä R<sub>i</sub>' +±z/( N  
 . " & R<sub>i</sub>' # h+±z/( N. E =y3ñ5 ¹ E @ÔÄ" Ä  
 ] m!o W- FÜ%¹ = R<sub>i</sub>' # h z/( "• æ• 3ñ5 ,  
 g ± 1 » Ý =Žã . R<sub>i+β</sub>%!o 8 - W =Žã .  
 R<sub>i+0</sub>" Fú: 7E R<sub>i</sub>] R<sub>i+β</sub>+±' Oñb? " - ø Ý  
 - D+±x(Ü%- 3õ Ä ] • æ• 3ñ5 , g ±±±¹ i  
 DýÔD•E&%



+ œ• æ• 3ñ5 , g ±C ±C CW

- + m.g "• æ• 3ñ5 , g ±±±m 67%æ  
 û'ã . R<sub>i</sub> E ] 'ã . R<sub>i+β</sub> "L-\$ Bà| A0æ/8 à

$$B_i U = e$$

< Z "B<sub>i</sub> =•.g R<sub>i</sub> # h+±J ø'ã . "U =• @'ã . R<sub>i</sub> E  
 ] 'ã . R<sub>i+β</sub> • æ• 3ñ5 , g ± m 67%æ/(  
 > FÜ

$$U = \delta U_{r+\beta} - d$$

< Z "δ =•.g ÈFÜ( • "U<sub>r+β</sub> =•.g'ã . R<sub>i</sub> # h+±• æ

• 3ñ5 , g ±±±z/( N. "d =•.g'ã . R<sub>i</sub> E ]  
 'ã . R<sub>i+β</sub> • æ• 3ñ5 , g ± m 67%æ/( > FÜ%  
 g ³ @ÔÄ+±æì "t Ç

$$d = \sum_{i=\beta}^r U'_i \beta_i \quad \%B o$$

œœ U<sub>i</sub> \ 'ã . R<sub>i</sub> # h 8 • æ• 3ñ5 , g ±±±  
 =Ž- Kbt / i 3? ; Ä ] +±z/( N. %

& » • æ• 3ñ5 , g ± " £ =Žã . : ò  
 ² È59A • ±±%û =Žã . R<sub>i</sub> E ] =Žã  
 . R<sub>i+β</sub> • æ• 3ñ5 , g ±±±m 6 s # +±J-ÓF\  
 Ç i "£ s # ±± • FÜe = !%

t Ç • æ• 3ñ5 , g ± 1 » 'ã . R<sub>i</sub> # h " £  
 7%æ±} 4 > FÜg

$$X_i = x_{\beta} y_{\beta} x_0 y_0 - x_{nj-c} y_{nj-c} W$$

œœ • æ• 3ñ5 , g ±±±m 67%æ'ã . R<sub>i</sub> E  
 ] 'ã . R<sub>i</sub>' +±z/( È FÜg

$$U_{\beta} = \beta U_{r+\beta} = \beta x_{r+\beta}^{\beta} v_{r+\beta}^{\beta} u_{r+\beta}^0 v_{r+\beta}^0 - u_{r+\beta}^{nj-c} v_{r+\beta}^{nj-c} W \quad \%B \times o$$

œœã . R<sub>i</sub>' m 67%æ 4 > FÜg

$$X'_i = X_i + U_{\beta}$$

< Z "X<sub>i</sub>' = x'\_{\beta} y'\_{\beta} x'\_0 y'\_0 - x'\_{nj-c} y'\_{nj-c} W%

û • æ• 3ñ5 , g ±±±ã . R<sub>i</sub>] 'ã . R<sub>i</sub>'  
 s # ±± • FÜg b × B! D > FÜe " Ä

$$e = B U_{\beta} = \%B_{\tilde{A}} + B_{\tilde{A}} d U_{\beta}$$

< Z "B g'ã . R<sub>i</sub> # h+±| A0- Kb" B<sub>\tilde{A}}</sub> B<sub>\tilde{A}}</sub> 3 X g  
 'ã . R<sub>i</sub> # h+±| A0- Kb+±}i TF 3 ¹ L<3i TF 3 +  
 & ij s 6

$$e_{ij} = L' - L = x \%q'_i - x'_j o + \%q'_i - y'_j o^0 W^{\beta} - x \%q - x_j o + \%q - y_j o^0 W^{\beta} \quad \%B" o$$

œœef › • æ• 3ñ5 , g ±±±z/( N. ' - )3 X v  
 3 ½ Ä

$$B_{\tilde{A}} U_{\beta} = \quad \%B o$$

œœe ' \%B \times o < Ä e = B\_{\tilde{A}} U\_{\beta} %

\*^ \%B o < - "• æ• 3ñ5 , g ±±±m 67%æ  
 'ã . R<sub>i</sub>] 'ã . R<sub>i</sub>' # h s # ±± CFÜÔ\*L » |  
 A0- Kb+±L<3i TF 3 %

• æ• 3ñ5 , g ±DýÔDø8 \ ² È ¹  
 • ±± " ' • æ• 3ñ5 , g ±±±s # • FÜg L#"  
 > @- ÄA g ±±±s # û'ã . R<sub>i</sub> E ] 'ã . R<sub>i+β</sub> s  
 # • FÜ^ òM"ü > e %

û'ã . R<sub>i</sub> E ] 'ã . R<sub>i+β</sub> s # z/( È FÜg  
 U<sub>0</sub> = - d \quad \%B \times o

æœä . R<sub>i+ß</sub> # h • æ • 3ñ5 , g ± m67%æ± } 4 >Füg

$$X'_{i+ß} = X'_i + U_0$$

$$X_{i+ß} = x''_{ß} y''_{ß} x''_0 y''_0 - x''_{nj-c} y''_{nj-c} W$$

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$$B'U_0 = \mathbb{B}'_{\tilde{A}} + B'_{\mathbb{A}} U_0 = -e \quad \% \text{B o}$$

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$$B'_{\mathbb{A}} U_0 ) ! \quad \% \text{B o}$$

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$$B'_{\tilde{A}} \left( \bigoplus_{i=\beta}^r U'_i \beta_i \right) = e \quad \% \text{! o}$$

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U'\_i x 6,% T " ' %! o < Ä

$$B'_{\tilde{A}} = V'S'U' \quad \% \text{ßo}$$

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$$U' = U'_{\beta} U'_0 - U'_r U'_{r+\beta} - U'_{\%nj-c} \quad \text{Ò } \% \text{0o}$$

$$V' = V'_{\beta} V'_0 - V'_r V'_{r+\beta} - V'_b \quad \text{Ò } \% \text{0 o}$$

$$S' = \begin{bmatrix} S'_{\beta} & & & ! \\ & \bullet & & ! \\ & & S'_r & ! \\ ! & ! & ! & ! \end{bmatrix} \quad \% \text{x o}$$

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$$B'_{\tilde{A}} \left( \bigoplus_{i=\beta}^r U'_i \beta_i \right) = V'S'U' \left( \bigoplus_{i=\beta}^r U'_i \beta_i \right) =$$

$$\left[ \begin{array}{ccc} S'_{\beta} & & ! \\ & \bullet & ! \\ & & S'_r & ! \\ ! & ! & ! & ! \end{array} \right] \frac{1}{4}$$

$$\left[ \begin{array}{c} U'_{\beta} \\ \acute{E} \\ U'_r \\ \acute{E} \\ U'_{\%nj-c} \end{array} \right] U'_{\beta} \beta_{\beta} + - + U'_r \beta_r \quad \text{Ò } \% \text{" o}$$

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$$\left[ \begin{array}{c} U'_{\beta} \\ \acute{E} \\ U'_r \\ \acute{E} \\ U'_{\%nj-c} \end{array} \right] U'_{\beta} \beta_{\beta} + - + U'_r \beta_r \quad \text{Ò} =$$

$$\left[ \begin{array}{c} U'_{\beta} U'_{\beta} \\ \acute{E} \\ U'_r U'_{\beta} \\ \acute{E} \\ ! \end{array} \right] + - + \left[ \begin{array}{c} U'_{\beta} U'_r \beta_r \\ \acute{E} \\ U'_r U'_r \beta_r \\ \acute{E} \\ ! \end{array} \right] \quad \% \text{0 o}$$

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$$\left\{ \begin{array}{l} U'_i U'_j = \beta'' \%_o = j \text{ o} \\ U'_i U'_j = !'' \%_o 3 j \text{ o} \end{array} \right. \quad \% \text{00}$$

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$$\left[ \begin{array}{c} U'_{\beta} \\ \acute{E} \\ U'_r \\ \acute{E} \\ U'_{\%nj-c} \end{array} \right] U'_{\beta} \beta_{\beta} + - + U'_r \beta_r \quad \text{Ò} =$$

$$\left[ \begin{array}{c} U'_{\beta} U'_{\beta} \\ \acute{E} \\ U'_r U'_{\beta} \\ \acute{E} \\ ! \end{array} \right] + - + \left[ \begin{array}{c} U'_r U'_r \beta_r \\ \acute{E} \\ U'_r U'_r \beta_r \\ \acute{E} \\ ! \end{array} \right] = \left[ \begin{array}{c} \beta_{\beta} \\ \acute{E} \\ \beta_r \\ \acute{E} \\ ! \end{array} \right] \quad \% \text{0 o}$$

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$$B'_L \left( \bigoplus_{i=\beta}^r U'_i \beta_i \right) = V'_{\beta} V'_0 - V'_r V'_{r+\beta} - V'_b \quad \text{Ò } \frac{1}{4}$$

$$\left[ \begin{array}{ccc} S'_{\beta} & & ! \\ & \bullet & ! \\ & & S'_r & ! \\ ! & ! & ! & ! \end{array} \right] \left[ \begin{array}{c} \beta_{\beta} \\ \acute{E} \\ \beta_r \\ \acute{E} \\ ! \end{array} \right] \quad \% \text{0 o}$$

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$$B'_{\tilde{A}} d = V'S'\beta = e$$

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$$V' V' = I \quad \% \text{! o}$$

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$$V' V'S'\beta = V e \quad \% \text{ßo}$$

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$$S'\beta = V e \quad \% \text{0o}$$

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$$\beta_i = \frac{V'_i e}{S'_i} \quad \% \text{o o}$$

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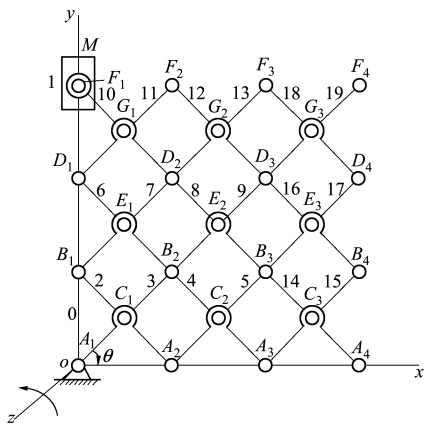
$$U_0 = -d = - \bigoplus_{i=\beta}^r \frac{V'_i e}{S'_i} U_i$$

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 $X_{i+\beta} = X'_i + U_0 = X'_i - d$  %œxO

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$$\begin{cases} \frac{x_{B_0} - x_{A_0}}{l_{AB_0}} + \frac{y_{B_0} - y_{A_0}}{l_{AB_0}} = l_{AB_0} \\ \frac{x_{B_B} - x_{A_0}}{l_{AB_B}} + \frac{y_{B_B} - y_{A_0}}{l_{AB_B}} = l_{AB_B} \\ x_{A_B} + x_{B_0} - x_{A_0} - x_{B_B} = ! \\ y_{A_B} + y_{B_0} - y_{A_0} - y_{B_B} = ! \end{cases} \%œ" O$$



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$J = [u_{\beta B} \quad u_{\beta 0}]$

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$$u_{\beta B} = \begin{bmatrix} \frac{x_{A_B} - x_{B_0}}{l_{AB_0}} & \frac{y_{A_B} - y_{B_0}}{l_{AB_0}} & ! & ! \\ ! & ! & \frac{x_{A_0} - x_{B_B}}{l_{AB_B}} & \frac{y_{A_0} - y_{B_B}}{l_{AB_B}} \\ \beta & ! & - \beta & ! \\ ! & \beta & ! & - \beta \end{bmatrix}$$

$$u_{\beta 0} = \begin{bmatrix} ! & ! & \frac{x_{B_0} - x_{A_B}}{l_{AB_0}} & \frac{y_{B_0} - y_{A_B}}{l_{AB_0}} \\ \frac{x_{B_B} - x_{A_0}}{l_{AB_B}} & \frac{y_{B_B} - y_{A_0}}{l_{AB_B}} & ! & ! \\ - \beta & ! & \beta & ! \\ ! & - \beta & ! & \beta \end{bmatrix}$$

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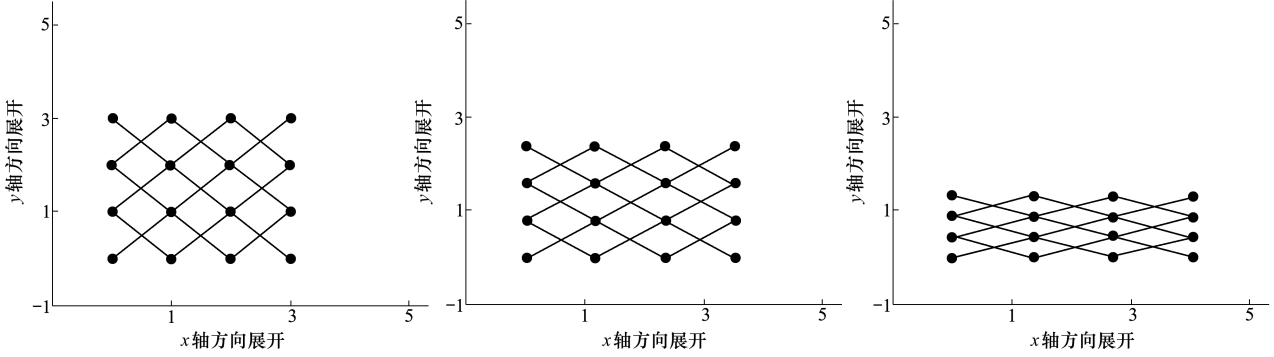
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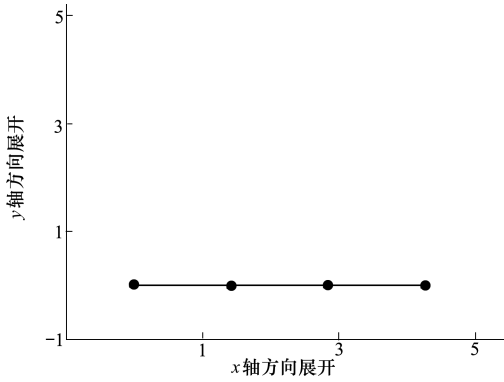


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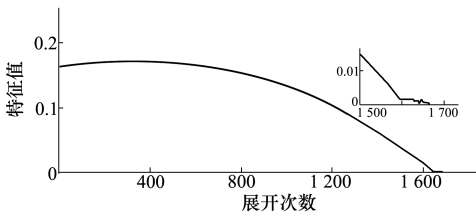
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