Step	Algorithm:		
1a			
4			
	where		
2			
3	while do		
2,3		٨	
5a			
	where		
6			
8			
5b			
7			
2			
	endwhile		
2,3		^ ¬()
1b			

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\frac{A_{TL}}{A_{BL}}\begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix}\right) \to \left(\frac{A_{00}}{a_{01}}\begin{vmatrix} a_{01} \\ a_{01} \end{vmatrix} A_{02} \\ A_{20}\begin{vmatrix} a_{21} \\ a_{21} \end{vmatrix} A_{22}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{b_1^T}\right), \left(\frac{C_T}{C_B}\right) \to \left(\frac{C_0}{c_1^T}\right) $ where a_{CT} is 1×1 , b_1 has 1 row, c_2 has 1 row.
6	where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row $ \left(\frac{C_0}{c_1^T}\right) = \left(\frac{A_{00}B_0 + \widehat{C}_0}{a_{01}^TB_0 + \widehat{c}_1}\right) $ $ \frac{1}{A_{02}B_0 + \widehat{C}_2} $
8	$C_0 := a_{01}b_1^T + C_0$ $c_1^T := \alpha_{11}b_1^T + c_1^T$ $C_2 := a_{12}^Tb_1^T + C_2$
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{10} \end{vmatrix} A_{01} \begin{vmatrix} A_{02} \\ a_{12} \\ A_{20} \end{vmatrix} A_{22} \right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{b_1^T} \\ B_2\right), \left(\frac{C_T}{C_B}\right) \leftarrow \left(\frac{C_0}{c_1^T} \\ C_2\right) $
7	$ \left(\frac{C_0}{c_1^T}\right) = \left(\frac{A_{00}B_0 + a_{01}b_1^T + \widehat{C}_0}{a_{01}^TB_0 + \alpha_{11}b_1^T + \widehat{c}_1} - \frac{1}{A_{02}B_0 + a_{12}^Tb_1^T + \widehat{C}_2}\right) $
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm_lu}(A, B, \widehat{C})$

Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$

$$A \to \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix} \right), B \to \left(\frac{B_T}{B_B}\right), C \to \left(\frac{C_T}{C_B}\right)$$

where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{\frac{a_{10}^T | \alpha_{11} | a_{12}^T}{A_{20} | a_{21} | A_{22}}}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{\frac{b_1^T}{B_2}}\right), \left(\frac{C_T}{C_B}\right) \to \left(\frac{C_0}{\frac{c_1^T}{C_2}}\right)$$

where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row

$$C_0 := a_{01}b_1^T + C_0$$

$$c_1^T := \alpha_{11} b_1^T + c_1^T$$

$$C_2 := a_{12}^T b_1^T + C_2$$

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline c_1^T \\ \hline C_2 \end{array}\right)$$

endwhile

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	where
2	
3	while do
2,3	\wedge
5a	
	where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg ($
1b	$[C] = \operatorname{symm_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \hat{C}$
4	
_	1
	where $\langle C \rangle \langle \hat{C} \rangle$
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
3	while do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	ondwhile
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg () $ $ [C] = \operatorname{argmin} \ln(A \cdot B \cdot \widehat{C}) $
1b	$[C] = \operatorname{symm} \operatorname{lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	
2	$ \frac{C_T}{C_B} = \frac{\widehat{C}_T}{\widehat{C}_B} $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows $ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	
	where
6	
8	
5b	
7	
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm} \operatorname{lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \hat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \overline{B_B} \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \overline{b_1^T} \\ \overline{B_2} \end{array}\right), \left(\begin{array}{c} C_T \\ \overline{C_B} \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \overline{c_1^T} \\ \overline{C_2} \end{array}\right) $ where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row
6	
8	
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \overline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \overline b_1^T \\ \overline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \overline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \overline c_1^T \\ \overline C_2 \end{array}\right) $
7	
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline c_1^T \\ C_2 \end{array}\right) $ where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row
6	$ \frac{C_0}{\frac{C_1}{C_2}} = \frac{A_{00}B_0 + \hat{C}_0}{\frac{a_{01}^T B_0 + \hat{c}_1}{A_{02}B_0 + \hat{C}_2}} $
8	
5b	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{10} \end{vmatrix} a_{11} \begin{vmatrix} a_{12} \\ a_{12} \end{vmatrix}, \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{b_1^T} \right), \left(\frac{C_T}{C_B}\right) \leftarrow \left(\frac{C_0}{c_1^T} \right) \\ \frac{C_T}{C_D} \leftarrow \left(\frac{C_0}{c_1^T} \right) \leftarrow \left(\frac{C_T}{C_D}\right) \leftarrow \left(\frac$
7	
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm_lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \rightarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{01} \end{vmatrix} \begin{vmatrix} A_{02} \\ a_{11} \end{vmatrix} \right), \left(\frac{B_T}{B_B} \right) \rightarrow \left(\frac{B_0}{b_1^T} \\ B_2 \right), \left(\frac{C_T}{C_B} \right) \rightarrow \left(\frac{C_0}{c_1^T} \\ C_2 \right) $ where a_{CT} is 1×1 , b_1 has 1 row, c_2 has 1 row.
6	where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row $ \left(\frac{C_0}{c_1^T}\right) = \left(\frac{A_{00}B_0 + \widehat{C}_0}{a_{01}^TB_0 + \widehat{c}_1}\right) \\ \frac{a_{01}^TB_0 + \widehat{c}_1}{A_{02}B_0 + \widehat{C}_2} $
8	
5b	$ \left(\frac{A_{TL} A_{TR}}{A_{BL} A_{BR}}\right) \leftarrow \left(\frac{A_{00} a_{01} A_{02}}{a_{10}^T \alpha_{11} a_{12}^T}, \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{b_1^T}\right), \left(\frac{C_T}{C_B}\right) \leftarrow \left(\frac{C_0}{c_1^T}\right) $
7	$ \begin{pmatrix} \frac{C_0}{c_1^T} \\ \overline{C_2} \end{pmatrix} = \begin{pmatrix} \frac{A_{00}B_0 + a_{01}b_1^T + \widehat{C}_0}{a_{01}^TB_0 + \alpha_{11}b_1^T + \widehat{c}_1} \\ \overline{A_{02}B_0 + a_{12}^Tb_1^T + \widehat{C}_2} \end{pmatrix} $
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm} \operatorname{lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
1a	$C = \widehat{C}$
4	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$ \left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) $
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \wedge m(A_{TL}) < m(A)$
5a	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline c_1^T \\ \hline C_2 \end{array}\right) $ where a_{CD} is 1 × 1, b_1 by 1 row, a_1 by 1 row, a_2 by 1 row,
6	where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row $ \left(\frac{C_0}{c_1^T}\right) = \left(\frac{A_{00}B_0 + \widehat{C}_0}{a_{01}^TB_0 + \widehat{c}_1}\right) = \left(\frac{A_{02}B_0 + \widehat{C}_0}{A_{02}B_0 + \widehat{C}_2}\right) $
8	$C_0 := a_{01}b_1^T + C_0$ $c_1^T := \alpha_{11}b_1^T + c_1^T$ $C_2 := a_{12}^Tb_1^T + C_2$
5b	$ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline c_1^T \\ \hline C_2 \end{array}\right) $
7	$ \left(\frac{C_0}{c_1^T}\right) = \left(\frac{A_{00}B_0 + a_{01}b_1^T + \widehat{C}_0}{a_{01}^TB_0 + \alpha_{11}b_1^T + \widehat{c}_1} - A_{02}B_0 + a_{12}^Tb_1^T + \widehat{C}_2\right) $
2	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right)$
	endwhile
2,3	$\left(\frac{C_T}{C_B}\right) = \left(\frac{\widehat{C}_T}{\widehat{C}_B}\right) \land \neg (m(A_{TL}) < m(A))$
1b	$[C] = \operatorname{symm} \operatorname{lu}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$
	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
	while $m(A_{TL}) < m(A)$ do
	$ \begin{pmatrix} A_{TL} A_{TR} \\ A_{BL} A_{BR} \end{pmatrix} \rightarrow \begin{pmatrix} A_{00} a_{01} A_{02} \\ a_{10}^T \alpha_{11} a_{12}^T \\ A_{20} a_{21} A_{22} \end{pmatrix}, \begin{pmatrix} B_T \\ B_B \end{pmatrix} \rightarrow \begin{pmatrix} B_0 \\ b_1^T \\ B_2 \end{pmatrix}, \begin{pmatrix} C_T \\ C_B \end{pmatrix} \rightarrow \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} $ where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row
	$C_0 := a_{01}b_1^T + C_0$ $c_1^T := \alpha_{11}b_1^T + c_1^T$ $C_2 := a_{12}^Tb_1^T + C_2$
	$ \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BR} \end{vmatrix} \leftarrow \left(\frac{A_{00}}{a_{01}} \begin{vmatrix} a_{01} \\ a_{11} \\ A_{21} \end{vmatrix} A_{02} \begin{vmatrix} A_{02} \\ A_{22} \end{vmatrix} , \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{b_1^T} \\ B_B\right) \leftarrow \left(\frac{C_T}{C_B}\right) \leftarrow \left(\frac{C_0}{c_1^T} \\ C_2\right) $
	endwhile

Algorithm: $[C] := \text{SYMM_LU_UNB_VAR2}(A, B, C)$

$$A \to \left(\frac{A_{TL}}{A_{BL}} \begin{vmatrix} A_{TR} \\ A_{BL} \end{vmatrix} \right), B \to \left(\frac{B_T}{B_B}\right), C \to \left(\frac{C_T}{C_B}\right)$$

where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows

while $m(A_{TL}) < m(A)$ do

$$\left(\frac{A_{TL} | A_{TR}}{A_{BL} | A_{BR}}\right) \to \left(\frac{A_{00} | a_{01} | A_{02}}{\frac{a_{10}^T | \alpha_{11} | a_{12}^T}{A_{20} | a_{21} | A_{22}}}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{\frac{b_1^T}{B_2}}\right), \left(\frac{C_T}{C_B}\right) \to \left(\frac{C_0}{\frac{c_1^T}{C_2}}\right)$$

where α_{11} is 1×1 , b_1 has 1 row, c_1 has 1 row

$$C_0 := a_{01}b_1^T + C_0$$

$$c_1^T := \alpha_{11} b_1^T + c_1^T$$

$$C_2 := a_{12}^T b_1^T + C_2$$

$$\left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ \hline A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline c_1^T \\ \hline C_2 \end{array}\right)$$

endwhile