1a $\{C = \widehat{C}\}$ 4 $A \rightarrow \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}$, $B \rightarrow \begin{pmatrix} B_T \\ B_B \end{pmatrix}$, $C \rightarrow \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows 2 $\left\{\begin{pmatrix} C_T \\ C_B \end{pmatrix}\right\} = \begin{pmatrix} A_{TL}B_T + A_{BL}^TB_B + \widehat{C}_T \\ A_{BL}B_T + \widehat{C}_B \end{pmatrix}$	}
where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows	
$2 \left\{ \left(\frac{C_T}{G} \right) = \left(\frac{A_{TL}B_T + A_{BL}^I B_B + C_T}{A_{DL}} \right) \right\}$	
(C_B) $A_{BL}B_T + C_B$	
3 while $m(A_{TL}) < m(A)$ do	
$2,3 \left\{ \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \land m(A_{TL}) < m(A) \right\}$	
5a $\left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & a_{01} & A_{02} \\ \hline a_{10}^T & \alpha_{11} & a_{12}^T \\ A_{20} & a_{21} & A_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) - \\ \text{where } \alpha_{11} \text{ is } 1 \times 1, b_1 \text{ has } 1 \text{ row}, c_1 \text{ has } 1 \text{ row}$	
$ \begin{cases} \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + & \widehat{c}_1^T \\ A_{20}B_0 + & \widehat{C}_2 \end{pmatrix} $	
$C_0 := A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$	
$c_1^T := a_{10}^T B_0 + \alpha_{11} b_1^T + a_{21}^T B_2 + c_1^T$	
$C_2 := A_{20}B_0 + a_{21}b_1^T + A_{22}B_2 + C_2$	
$7 \left\{ \begin{array}{c} C_0 \\ c_1^T \\ C_2 \end{array} \right) = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \alpha_{11} b_1^T + a_{21}^T B_2 + \widehat{c}_1^T \\ A_{20}B_0 + a_{21} b_1^T + \widehat{C}_2 \end{pmatrix}$	
$ \left(\begin{array}{c 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} \\ 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) \leftarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_T \\ C_B \end{array}\right) $	$-\left(\frac{C_0}{c_1^T}\right)$
$2 \qquad \left\{ \qquad \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right.$	
endwhile	
$2,3 \left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$	
$1b \{C = AB + \widehat{C}$	}

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	{
4	
	where
2	
3	while do
2,3	$\left\{ \begin{array}{c} \wedge \end{array} \right.$
5a	
	where
6	
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$
O	$A_{20}B_0 + A_{22}B_2 +$
7	}
F1	
5b	
2	
	endwhile
2,3	
1b	{

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}\}$
4	
	where
2	
- 0	
3	while do
2,3	^
5a	
5a	
	where
6	
0	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$
8	$a_{10}^T B_0 +$
	$A_{20}B_0 + A_{22}B_2 +$
7	
'	
5b	
96	
2	
	andwhile
	endwhile
2,3	\setminus $\land \neg ($
11_	
1b	$\left \left\{ C = AB + \widehat{C} \right. \right. $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}\}$
4	where
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while do
2,3	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \wedge \end{array} \right.$
5a	where
6	
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
5b	
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B} \right) \land \neg () \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	${C = \widehat{C}}$
4	where
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge m(A_{TL}) < m(A) \right\}$
5a	where
6	
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
5b	
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}$
4	$A \rightarrow \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \rightarrow \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \rightarrow \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land m(A_{TL}) < m(A) \right\}$
5a	where
6	
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
5b	
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	${C = \widehat{C}}$
4	$A \to \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right), B \to \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right), C \to \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge m(A_{TL}) < m(A) \right\}$
5a	$ \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
6	
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
5b	$A_{20} \ a_{21} \ A_{22} $ $B_2 $ $C_2 $
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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	$\left\{ \begin{pmatrix} C_T \\ C_B \end{pmatrix} = \begin{pmatrix} A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T \\ A_{BL}B_T + \hat{C}_B \end{pmatrix} \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land m(A_{TL}) < m(A) \right\}$
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 \\ 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 \\ 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	$ \left\{ \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \widehat{c}_1^T \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} \right\} $
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
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} \\ 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) \leftarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ c_1^T \\ C_2 \end{array}\right) $
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land m(A_{TL}) < m(A) \right\}$
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 \\ 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	$ \begin{cases} \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \widehat{c}_1^T \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} $
8	$A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $a_{10}^T B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	$ \begin{cases} \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \alpha_{11} b_1^T + a_{21}^T B_2 + \widehat{c}_1^T \\ A_{20}B_0 + a_{21} b_1^T + \widehat{C}_2 \end{pmatrix} $
5b	$ \left(\begin{array}{c 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} \\ 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) \leftarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ c_1^T \\ C_2 \end{array}\right) $
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land m(A_{TL}) < m(A) \right\}$
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 \\ 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	$ \begin{cases} \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \widehat{c}_1^T \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} $
8	$C_0 := A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $c_1^T := a_{10}^T B_0 + \alpha_{11}b_1^T + a_{21}^T B_2 + c_1^T$ $C_2 := A_{20}B_0 + a_{21}b_1^T + A_{22}B_2 + C_2$
7	$ \begin{cases} \begin{pmatrix} C_0 \\ c_1^T \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + \widehat{C}_0 \\ a_{10}^T B_0 + \alpha_{11} b_1^T + a_{21}^T B_2 + \widehat{c}_1^T \\ A_{20}B_0 + a_{21} b_1^T + \widehat{C}_2 \end{pmatrix} $
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} \\ 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) \leftarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ c_1^T \\ C_2 \end{array}\right) $
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \land \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows
while $m(A_{TL}) < m(A)$ do
$ \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 \\ 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
$C_0 := A_{00}B_0 + (a_{10}^T)^T b_1^T + A_{20}^T B_2 + C_0$ $c_1^T := a_{10}^T B_0 + \alpha_{11}b_1^T + a_{21}^T B_2 + c_1^T$ $C_2 := A_{20}B_0 + a_{21}b_1^T + A_{22}B_2 + C_2$
$ \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} \\ 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) \leftarrow \left(\begin{array}{c} B_0 \\ b_1^T \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ c_1^T \\ C_2 \end{array}\right) $
endwhile

Algorithm: C := AB + C where A is symmetric and stored in the lower triangular part

$$A o \left(\begin{array}{c|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array} \right) , B o \left(\begin{array}{c|c} B_T \\ \hline B_B \end{array} \right) , C o \left(\begin{array}{c|c} C_T \\ \hline C_B \end{array} \right)$$

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

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

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

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

$$C_0 :=$$

$$c_1^T := \qquad \qquad \alpha_{11}b_1^T + a_{21}^T B_2 + c_1^T$$

$$C_2 := a_{21}b_1^T + C_2$$

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

endwhile