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	Determine block size b $ \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} & A_{11} & A_{12} \\ 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 \\ B_1 \\ 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 \\ C_2 \end{array}\right) $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$ \begin{cases} \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + \widehat{C}_0 \\ A_{10}B_0 + & \widehat{C} \\ A_{20}B_0 + & \widehat{C}_2 \end{pmatrix} $
8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $C_1 := A_{10}B_0 + A_{11}B_1 + A_{21}^T B_1 + C_1$ $C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	$ \begin{cases} \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + \widehat{C}_0 \\ A_{10}B_0 + A_{11}B_1 + A_{21}^T B_2 + \widehat{C} \\ A_{20}B_0 + A_{21}B_1 + \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} & A_{11} & A_{12} \\ \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 \\ \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 \\ \hline 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} $

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	
5a	Determine block size b where
6	
8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $A_{10}B_0 +$ $A_{20}B_0 +$ $A_{22}B_2 +$
7	
5b	
2	
	endwhile
2,3	$\left\{ \begin{array}{c} & & \\ & & \\ \end{array} \right.$
1b	{

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part	
1a	$\{{\color{blue}C}=\widehat{C}$	
4		
	where	
2		
3	while do	
2,3	$\Big\{$	
2,0		
	Determine block size b	
۳.		
5a		
	where	
		1
6		}
	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$	
8		
	$A_{20}B_0+ A_{22}B_2+$	
7	{	}
5b		
0		
2		
	endwhile	_
2,3	$\langle \neg () \rangle$	
1b	$\{C = AB + \widehat{C}\}$	<u>,</u>
	J	

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	${C = \widehat{C}}$
4	
2	where $ \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	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B}\right) \wedge \end{array} \right.$
	Determine block size b
5a	
	where
6	
	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$
8	
	$A_{20}B_0 + A_{22}B_2 +$
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 () \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	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge m(A_{TL}) < m(A) \right\}$
	Determine block size b
5a	wh one
	where
6	
8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $A_{10}B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
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	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge \neg (m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C} $

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 $\left\{\begin{pmatrix} C_T \\ C_B \end{pmatrix} = \begin{pmatrix} A_{TL}B_T + A_{BL}^TB_B + \widehat{C}_T \\ A_{BL}B_T + \widehat{C}_B \end{pmatrix}\right\}$ 3 while $m(A_{TL}) < m(A)$ do 2,3 $\left\{\begin{pmatrix} C_T \\ C_B \end{pmatrix} = \begin{pmatrix} A_{TL}B_T + A_{BL}^TB_B + \widehat{C}_T \\ A_{BL}B_T + \widehat{C}_B \end{pmatrix} \land m(A_{TL}) < m(A)$ Determine block size b 5a where 6 $\left\{\begin{pmatrix} C_T \\ C_B \end{pmatrix} = \begin{pmatrix} A_{TL}B_T + A_{BL}^TB_B + \widehat{C}_T \\ A_{BL}B_T + \widehat{C}_B \end{pmatrix} \right\}$
where A_{TL} is 0×0 , B_T has 0 rows, C_T has 0 rows $ \begin{cases} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^TB_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B}\right) \\ 3 \text{ while } m(A_{TL}) < m(A) \text{ do} \end{cases} $ $ 2,3 \begin{cases} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{TL}B_T + A_{BL}^TB_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B}\right) \land m(A_{TL}) < m(A) \end{cases} $ Determine block size b $ \frac{\text{where}}{\text{total position of the problem}} $
3 while $m(A_{TL}) < m(A)$ do 2,3 $\left\{ \begin{array}{c} \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B} \right) \land m(A_{TL}) < m(A) \\ \end{array} \right\}$ Determine block size b where
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 m(A_{TL}) < m(A) \\ \text{Determine block size } b \end{array} \right. $
Determine block size b where
5a where
where
$\left\{ \begin{array}{c c} 6 & \left\{ \end{array} \right. \right.$
$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $A_{10}B_0 +$
$A_{20}B_0+ A_{22}B_2+$
$7 \left\{ \begin{array}{c} \\ \end{array} \right\}$
5b
$2 \qquad \left\{ \qquad \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B} \right) \right\}$
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	$A \to \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_T \\ C_B \end{pmatrix}$ 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	Determine block size b $ \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix} \rightarrow \begin{pmatrix} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ A_{20} & A_{21} & A_{22} \end{pmatrix}, \begin{pmatrix} B_T \\ B_B \end{pmatrix} \rightarrow \begin{pmatrix} B_0 \\ B_1 \\ B_2 \end{pmatrix}, \begin{pmatrix} C_T \\ C_B \end{pmatrix} \rightarrow \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	
8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $A_{10}B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
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} & A_{11} & A_{12} \\ \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 \\ \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 \\ \hline 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	$\left\{ \begin{pmatrix} C_T \\ C_B \end{pmatrix} = \begin{pmatrix} A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T \\ A_{BL}B_T + \hat{C}_B \end{pmatrix} \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge m(A_{TL}) < m(A) \right\}$
5a	Determine block size b $ \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} & A_{11} & A_{12} \\ 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 \\ B_1 \\ 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 \\ C_2 \end{array}\right) $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$ \left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + \widehat{C}_0 \\ A_{10}B_0 + \widehat{C} \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} $
8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $A_{10}B_0 +$ $A_{20}B_0 + A_{22}B_2 +$
7	
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} & A_{11} & A_{12} \\ \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 \\ \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 \\ 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	$\{C = \widehat{C}\}$
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2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + A_{BL}^T B_B + \hat{C}_T}{A_{BL}B_T + \hat{C}_B} \right) \right\}$
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	Determine block size b $ \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} & A_{11} & A_{12} \\ 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 \\ B_1 \\ 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 \\ C_2 \end{array}\right) $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$ \begin{cases} \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + \widehat{C}_0 \\ A_{10}B_0 + \widehat{C}_1 \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} $
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5b	$A_{00} A_{01} A_{02} A_{02} A_{03} A_{02} A_{03} $
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 + \hat{C} $

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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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
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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	Determine block size b $ \left(\begin{array}{c c} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ 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 \\ B_1 \\ 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 \\ C_2 \end{array}\right) $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
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8	$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $C_1 := A_{10}B_0 + A_{11}B_1 + A_{21}^T B_1 + C_1$ $C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	$ \begin{cases} \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + \widehat{C}_0 \\ A_{10}B_0 + A_{11}B_1 + A_{21}^T B_2 + \widehat{C} \\ A_{20}B_0 + A_{21}B_1 + \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} & A_{11} & A_{12} \\ \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 \\ \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 \\ \hline 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} $

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
Determine block size b $ \begin{pmatrix} A_{TL} & A_{TR} \\ A_{BL} & A_{BR} \end{pmatrix} \rightarrow \begin{pmatrix} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ A_{20} & A_{21} & A_{22} \end{pmatrix}, \begin{pmatrix} B_T \\ B_B \end{pmatrix} \rightarrow \begin{pmatrix} B_0 \\ B_1 \\ B_2 \end{pmatrix}, \begin{pmatrix} C_T \\ C_B \end{pmatrix} \rightarrow \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} $ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$ $C_1 := A_{10}B_0 + A_{11}B_1 + A_{21}^T B_1 + C_1$ $C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
$ \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} & A_{11} & A_{12} \\ \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 \\ \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 \\ 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

Determine block size b

$$\left(\begin{array}{c|c}
A_{TL} & A_{TR} \\
\hline
A_{BL} & A_{BR}
\end{array}\right) \to \left(\begin{array}{c|c}
A_{00} & A_{01} & A_{02} \\
\hline
A_{10} & A_{11} & A_{12} \\
A_{20} & A_{21} & A_{22}
\end{array}\right), \left(\begin{array}{c}
B_T \\
B_B
\end{array}\right) \to \left(\begin{array}{c}
B_0 \\
B_1 \\
B_2
\end{array}\right), \left(\begin{array}{c}
C_T \\
C_B
\end{array}\right) \to \left(\begin{array}{c}
C_0 \\
C_1 \\
C_2
\end{array}\right)$$

where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows

$$C_1 := A_{11}B_1 + A_{21}^T B_1 + C_1$$

$$C_2 := A_{21}B_1 + C_2$$

$$\left(\begin{array}{c|c|c}
A_{TL} & A_{TR} \\
\hline
A_{BL} & A_{BR}
\end{array}\right) \leftarrow \left(\begin{array}{c|c}
A_{00} & A_{01} & A_{02} \\
A_{10} & A_{11} & A_{12} \\
\hline
A_{20} & A_{21} & A_{22}
\end{array}\right), \left(\begin{array}{c}
B_T \\
B_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
B_0 \\
B_1 \\
\hline
B_2
\end{array}\right), \left(\begin{array}{c}
C_T \\
C_B
\end{array}\right) \leftarrow \left(\begin{array}{c}
C_0 \\
C_1 \\
\hline
C_2
\end{array}\right)$$

endwhile