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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \hat{C}_T}{A_{BL} B_T + A_{BR} B_B + \hat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land m(A_{BR}) < m(A) \right\}$
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} \\ \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 \\ B_1 \\ \hline 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 \\ \hline 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_{20}^T B_2 + \widehat{C}_0 \\ A_{21}^T B_2 + \widehat{C}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \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_{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}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \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} \\ \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) \leftarrow \left(\begin{array}{c} B_0 \\ B_1 \\ 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	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	
5b	
2	
	endwhile
2,3	$\left\{ \begin{array}{c} \\ \\ \end{array} \right. $
1b	<b>{</b>

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part	
1a	$\{C = \widehat{C}\}$	
4	where	
2		
3	while do	
2,3		
	Determine block size $b$	
5a		
	where	
6		
8	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$	
7		
5b		
2		
	endwhile	
2,3	$\left  \begin{array}{c} \\ \\ \\ \end{array} \right  \wedge \neg ( \hspace{1cm} )$	
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	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$	
3	while do	
2,3	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B}\right) \wedge \right. \end{array}$	
	Determine block size $b$	
5a		
	where	
6		
8		
	$C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$	
7		
_ '		
5b		
2	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B}\right) \end{array} \right.$	}
	$\begin{pmatrix} C_B \end{pmatrix} \begin{pmatrix} A_{BL}B_T + A_{BR}B_B + \widehat{C}_B \end{pmatrix}$ endwhile	
		1
2,3	$ \left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \hat{C}_T}{A_{BL} B_T + A_{BR} B_B + \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	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \wedge m(A_{BR}) < m(A) \right\}$
	Determine block size $b$
5a	
	where
6	
8	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	
5b	
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land m(A_{BR}) < m(A) \right\}$
	Determine block size b
F .	
5a	
	where
6	}
	$A_{00}B_0 + A_{20}^T B_2 +$
8	$A_{21}^T B_1 +$
	$C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	
(	
5b	
30	
	$\begin{pmatrix} & & & & & & & & & & & & & & & & & & &$
2	$\left\{ \qquad \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) $
	$ \begin{array}{c c} C_B & A_{BL}B_T + A_{BR}B_B + \widehat{C}_B \\ \hline \text{endwhile} \end{array} $
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
1b	$ \left\{ C = AB + \widehat{C} \right\} $
10	U = AD + C

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}$
4	$A  o \left(\begin{array}{c c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right), B  o \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right), C  o \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land m(A_{BR}) < m(A) \right\}$
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	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
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 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) \leftarrow \left(\begin{array}{c c}B_0 \\ \hline B_1 \\ 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	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \wedge m(A_{BR}) < m(A) \right\}$
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} \\ 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) \rightarrow \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) \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_{20}^T B_2 + \widehat{C}_0 \\ A_{21}^T B_2 + \widehat{C}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \widehat{C}_2 \end{pmatrix} $
8	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
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} \\ \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) \leftarrow \left(\begin{array}{c} B_0 \\ B_1 \\ 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	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \hat{C}_T}{A_{BL} B_T + A_{BR} B_B + \hat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land m(A_{BR}) < m(A) \right\}$
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} \\ \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 \\ B_1 \\ \hline B_2 \end{array}\right), \left(\begin{array}{c} C_T \\ C_B \end{array}\right) \rightarrow \left(\begin{array}{c} 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_{20}^T B_2 + \widehat{C}_0 \\ A_{21}^T B_2 + \widehat{C}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \widehat{C}_2 \end{pmatrix} $
8	$A_{00}B_0 + A_{20}^T B_2 + A_{21}^T B_1 + C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$
7	$ \begin{cases} \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{10}^T B_1 + A_{20}^T B_2 + \hat{C}_0 \\ A_{10} B_0 + A_{11} B_1 + A_{21}^T B_2 + \hat{C}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \hat{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} \\ \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) \leftarrow \left(\begin{array}{c} B_0 \\ B_1 \\ 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	$\left\{ \begin{array}{c} \left(\frac{C_T}{C_B}\right) = \left(\frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B}\right) \end{array} \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
2	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
3	while $m(A_{BR}) < m(A)$ do
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land m(A_{BR}) < m(A) \right\}$
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} \\ \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 \\ B_1 \\ \hline 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 \\ \hline 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_{20}^T B_2 + \widehat{C}_0 \\ A_{21}^T B_2 + \widehat{C}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \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_{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}_1 \\ A_{20} B_0 + A_{21} B_1 + A_{22} B_2 + \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} \\ \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) \leftarrow \left(\begin{array}{c} B_0 \\ B_1 \\ 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	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \right\}$
	endwhile
2,3	$\left\{ \left( \frac{C_T}{C_B} \right) = \left( \frac{A_{BL}^T B_B + \widehat{C}_T}{A_{BL} B_T + A_{BR} B_B + \widehat{C}_B} \right) \land \neg (m(A_{BR}) < m(A)) \right\}$
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 $A_{BR}$ is $0 \times 0$ , $B_B$ has 0 rows, $C_B$ has 0 rows
while $m(A_{BR}) < m(A)$ do
Determine block size $b$ $ \left(\begin{array}{c 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} \\ 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) \rightarrow \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) \rightarrow \left(\begin{array}{c} C_0 \\ C_1 \\ \hline C_2 \end{array}\right) $ 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} 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} & A_{11} & A_{12} \\ 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 \\ 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  $A_{BR}$  is  $0 \times 0$ ,  $B_B$  has 0 rows,  $C_B$  has 0 rows

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

Determine block size b

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

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

$$C_0 := A_{10}^T B_1 + C_0$$

$$C_1 := A_{10}B_0 + A_{11}B_1 + C_1$$

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

endwhile