Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + \quad \widehat{C}_0 \\ A_{10}B_0 + \quad \widehat{C} \\ A_{20}B_0 + \quad \widehat{C}_2 \end{pmatrix} \right\}$
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	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + \quad \widehat{C}_0 \\ A_{10}B_0 + A_{11}B_1 + \quad \widehat{C} \\ A_{20}B_0 + A_{21}B_1 + \quad \widehat{C}_2 \end{pmatrix} \right\}$
5b	$\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
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	$\wedge$
5a	**Determine block size** b where
6	
8	$A_{00}B_0 +$ $A_{20}^T B_2 +$ $A_{10}B_0 +$ $A_{21}^T B_1 +$ $A_{20}B_0 +$ $A_{22}B_2 +$
7	
5b	
2	
	endwhile
2,3	$\wedge \neg($ $)$
1b	{ }

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{ \right.$ $\left. \right\}$
3	while do
2,3	$\left\{ \right.$ $\wedge$ $\left. \right\}$
5a	**Determine block size** b where
6	$\left\{ \right.$ $\left. \right\}$
8	$A_{00}B_0 +$ $A_{20}^T B_2 +$ $A_{10}B_0 +$ $A_{21}^T B_1 +$ $A_{20}B_0 +$ $A_{22}B_2 +$
7	$\left\{ \right.$ $\left. \right\}$
5b	
2	$\left\{ \right.$ $\left. \right\}$
	endwhile
2,3	$\left\{ \right.$ $\wedge \neg($ $)$ $\left. \right\}$
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	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right\}$
3	while do
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge \right.$
5a	**Determine block size** b where
6	$\left\{ \right.$
8	$A_{00}B_0 +$ $A_{20}^T B_2 +$ $A_{10}B_0 +$ $A_{21}^T B_1 +$ $A_{20}B_0 +$ $A_{22}B_2 +$
7	$\left\{ \right.$
5b	
2	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \right.$
	endwhile
2,3	$\left\{ \left(\frac{C_T}{C_B} \right) = \left(\frac{A_{TL}B_T + \widehat{C}_T}{A_{BL}B_T + \widehat{C}_B} \right) \wedge \neg(\quad) \right.$
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	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array} \right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array} \right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b where
6	$\left\{ \right.$ $\left. \right\}$
8	$\begin{array}{ll} A_{00}B_0 + & A_{20}^T B_2 + \\ A_{10}B_0 + & A_{21}^T B_1 + \\ A_{20}B_0 + & A_{22}B_2 + \end{array}$
7	$\left\{ \right.$ $\left. \right\}$
5b	
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array} \right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array} \right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array} \right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
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	$A \rightarrow \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b where
6	$\left\{ \right.$ $\left. \right\}$
8	$A_{00}B_0 +$ $A_{20}^T B_2 +$ $A_{10}B_0 +$ $A_{21}^T B_1 +$ $A_{20}B_0 +$ $A_{22}B_2 +$
7	$\left\{ \right.$ $\left. \right\}$
5b	
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
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	$A \rightarrow \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
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3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ C_2 \end{array}\right)$ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \right.$ $\left. \right\}$
8	$A_{00}B_0 + \quad A_{20}^T B_2 +$ $A_{10}B_0 + \quad A_{21}^T B_1 +$ $A_{20}B_0 + \quad A_{22}B_2 +$
7	$\left\{ \right.$ $\left. \right\}$
5b	$\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \quad \widehat{C}_T \\ \hline A_{BL}B_T + \quad \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
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Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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3	while $m(A_{TL}) < m(A)$ do
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right) = \left(\begin{array}{l} A_{00}B_0 + \widehat{C}_0 \\ \hline A_{10}B_0 + \widehat{C} \\ \hline A_{20}B_0 + \widehat{C}_2 \end{array}\right) \right\}$
8	$A_{00}B_0 + \quad A_{20}^T B_2 +$ $A_{10}B_0 + \quad A_{21}^T B_1 +$ $A_{20}B_0 + \quad A_{22}B_2 +$
7	$\left\{ \right\}$
5b	$\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{l} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
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	$A \rightarrow \left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$, $C \rightarrow \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right)$ where A_{TL} is 0×0, B_T has 0 rows, C_T has 0 rows
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6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + \widehat{C}_0 \\ A_{10}B_0 + \widehat{C} \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} \right\}$
8	$A_{00}B_0 + \quad A_{20}^T B_2 +$ $A_{10}B_0 + \quad A_{21}^T B_1 +$ $A_{20}B_0 + \quad A_{22}B_2 +$
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5b	$\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C}$ $\}$

Step	Algorithm: $C := AB + C$ where A is symmetric and stored in the lower triangular part
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2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
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2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge m(A_{TL}) < m(A) \right\}$
5a	**Determine block size** b $\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c\|cc} A_{00} & A_{01} & A_{02} \\ \hline A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \rightarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$ where A_{11} is $b \times b$, B_1 has b rows, C_1 has b rows
6	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + \widehat{C}_0 \\ A_{10}B_0 + \widehat{C} \\ A_{20}B_0 + \widehat{C}_2 \end{pmatrix} \right\}$
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	$\left\{ \begin{pmatrix} C_0 \\ C_1 \\ C_2 \end{pmatrix} = \begin{pmatrix} A_{00}B_0 + A_{10}^T B_1 + \widehat{C}_0 \\ A_{10}B_0 + A_{11}B_1 + \widehat{C} \\ A_{20}B_0 + A_{21}B_1 + \widehat{C}_2 \end{pmatrix} \right\}$
5b	$\left(\begin{array}{c\|c} A_{TL} & A_{TR} \\ \hline A_{BL} & A_{BR} \end{array}\right) \leftarrow \left(\begin{array}{cc\|c} A_{00} & A_{01} & A_{02} \\ A_{10} & A_{11} & A_{12} \\ \hline A_{20} & A_{21} & A_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$, $\left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) \leftarrow \left(\begin{array}{c} C_0 \\ \hline C_1 \\ \hline C_2 \end{array}\right)$
2	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \right\}$
	endwhile
2,3	$\left\{ \left(\begin{array}{c} C_T \\ \hline C_B \end{array}\right) = \left(\begin{array}{c} A_{TL}B_T + \widehat{C}_T \\ \hline A_{BL}B_T + \widehat{C}_B \end{array}\right) \wedge \neg(m(A_{TL}) < m(A)) \right\}$
1b	$\{C = AB + \widehat{C}$ $\}$

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

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

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

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

Determine block size b

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

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

$$C_0 := A_{00}B_0 + A_{10}^T B_1 + A_{20}^T B_2 + C_0$$
$$C_1 := A_{10}B_0 + A_{11}B_1 + A_{21}^T B_1 + C_1$$
$$C_2 := A_{20}B_0 + A_{21}B_1 + A_{22}B_2 + C_2$$

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

endwhile

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

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

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

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

Determine block size b

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

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

$$\begin{array}{lll} C_0 := & A_{10}^T B_1 + & C_0 \\ C_1 := & A_{11} B_1 + & C_1 \\ C_2 := & A_{21} B_1 + & C_2 \end{array}$$

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

endwhile