Step	Algorithm: $C = AB^T + BA^T + C$
1a	$\{C = \widehat{C}\}$
4	$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL}}{C_{BL}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) \end{array} \right\}$
5a	Determine block size b $ \begin{pmatrix} A_T \\ A_B \end{pmatrix} \rightarrow \begin{pmatrix} A_0 \\ A_1^T \\ A_2 \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_{TL} & C_{TR} \\ C_{BL} & C_{BR} \end{pmatrix} \rightarrow \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \left\{ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & \widehat{C}_{01} & \widehat{C}_{02} \\ A_1^T B_0^T + \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 B_0^T + \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
8	$C_{01} = A_0 (B_1^T)^T + B_0 (A_1^T)^T + C_{01}^T$ $C_{11} = A_1^T (B_1^T)^T + B_1^T (A_1^T)^T + C_{11}$ $C_{10}^T = B_1^T A_0^T + C_{10}^T$ $C_{20} = A_2 (B_1^T)^T + C_{20}^T$ $C_{21} = A_2 B_0^T + A_1^T B_0^T + C_{20}^T$
7	$ \left\{ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & A_0 (B_1^T)^T + B_0 (A_1^T)^T + \widehat{c}_{01} & \widehat{C}_{02} \\ A_1 B_0^T + B_1^T A_0^T + \widehat{C}_{10}^T & A_1^T (b_1^T)^T + B_1^T (A_1^T)^T + \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 (b_1^T)^T + A_2 B_0^T + \widehat{C}_{20} & A_2 B_0^T + A_1^T B_0^T + \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} \right\} $
	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{02}}\right) \\ \frac{C_{TL}}{C_{BL} C_{BR}} \leftarrow \left(\frac{C_{00} C_{01}}{C_{11}}\right) \\ \frac{C_{TL}}{C_{20} C_{21}} C_{22} $
2	$ \left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) $
1b	$\{C = AB^T + BA^T + \hat{C} $

Step	Algorithm: $C = AB^T + BA^T + C$
1a	{
4	where
2	
3	while do
2,3	
	Determine block size b
5a	
	where
6	
U	
8	
7	
5b	
2	
	endwhile
2,3	
1b	\
10	L

Step	Algorithm: $C = AB^T + BA^T + C$
1a	$\{C=\widehat{C}$
4	where
2	
3	while do
2,3	
	Determine block size b
5a	
	where
6	
8	
7	
5b	
2	
	endwhile
2,3	$ \left\{ \begin{array}{c} \\ \\ \\ \end{array} \right. $
1b	$\{C = AB^T + BA^T + \widehat{C} $ }

Step	Algorithm: $C = AB^T + BA^T + C$
1a	${C = \widehat{C}}$
4	where
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $
3	while do
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge \right.$
	Determine block size b
5a	
	where
6	
8	
7	}
5b	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$ \left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg () $
1b	$\{C = AB^T + BA^T + \widehat{C} $

Step	Algorithm: $C = AB^T + BA^T + C$
1a	$\{C = \widehat{C}\}$
4	where
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) \end{array} \right\}$
	Determine block size b
5a	
	where
6	
8	
7	
5b	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) $
1b	$\{C = AB^T + BA^T + \widehat{C} $ }

Step	Algorithm: $C = AB^T + BA^T + C$
1a	${C = \widehat{C}}$
4	$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL}}{C_{BL}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) $
	Determine block size b
5a	
	where
6	
8	
7	
5b	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C))$
1b	$\{C = AB^T + BA^T + \widehat{C} $ }

Step	Algorithm: $C = AB^T + BA^T + C$
1a	${C = \widehat{C}}$
4	$A \rightarrow \left(\frac{A_T}{A_B}\right), B \rightarrow \left(\frac{B_T}{B_B}\right), C \rightarrow \left(\frac{C_{TL}}{C_{BL}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is 0×0
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) $
5a	
6	
8	
7	
5b	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{02}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{10} C_{11}}\right) \leftarrow \left(\frac{C_{02}}{C_{10} C_{11}}\right) $
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) $
1b	$\{C = AB^T + BA^T + \widehat{C} $ }

Step	Algorithm: $C = AB^T + BA^T + C$
1a	$\{C = \widehat{C}\}$
4	$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \right\}$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) $
5a	Determine block size b $ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} \begin{vmatrix} C_{TR} \\ C_{BR} \end{vmatrix}\right) \to \left(\frac{C_{00}}{C_{01}} \begin{vmatrix} C_{01} \\ C_{10} \end{vmatrix} \begin{vmatrix} C_{11} \\ C_{12} \\ C_{20} \end{vmatrix} \begin{vmatrix} C_{21} \\ C_{22} \end{vmatrix}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \left\{ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & \widehat{C}_{01} & \widehat{C}_{02} \\ A_1^T B_0^T + \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 B_0^T + \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
8	
7	
5b	$\left(\begin{array}{c}A_B\end{array}\right)$ $\left(\begin{array}{c}B_B\end{array}\right)$ $\left(\begin{array}{c}B_B\end{array}\right)$ $\left(\begin{array}{c}C_{BL}\end{array}\right)$ $\left(\begin{array}{c}C_{BR}\end{array}\right)$ $\left(\begin{array}{c}C_{20}\end{array}\right)$
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) $
1b	$\{C = AB^T + BA^T + \widehat{C} $

Step	Algorithm: $C = AB^T + BA^T + C$
1a	$\{C = \widehat{C}$
4	$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) \end{array} \right\}$
5a	Determine block size b $ \begin{pmatrix} A_T \\ A_B \end{pmatrix} \rightarrow \begin{pmatrix} A_0 \\ A_1^T \\ A_2 \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_{TL} & C_{TR} \\ C_{BL} & C_{BR} \end{pmatrix} \rightarrow \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \left\{ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \hat{C}_{00} & \hat{C}_{01} & \hat{C}_{02} \\ A_1^T B_0^T + \hat{C}_{10}^T & \hat{C}_{11} & \hat{C}_{12}^T \\ A_2 B_0^T + \hat{C}_{20} & \hat{C}_{21} & \hat{C}_{22} \end{pmatrix} $
8	
7	$ \left\{ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & A_0 (B_1^T)^T + B_0 (A_1^T)^T + \widehat{c}_{01} & \widehat{C}_{02} \\ A_1 B_0^T + B_1^T A_0^T + \widehat{C}_{10}^T & A_1^T (b_1^T)^T + B_1^T (A_1^T)^T + \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 (b_1^T)^T + A_2 B_0^T + \widehat{C}_{20} & A_2 B_0^T + A_1^T B_0^T + \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
5b	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{10} C_{11}}\right) \\ \frac{C_{TL}}{C_{BL} C_{BR}} \leftarrow \left(\frac{C_{00} C_{01}}{C_{10} C_{11}}\right) \leftarrow \left(\frac{C_{02}}{C_{10} C_{11}}\right) $
2	$ \left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $
	endwhile
2,3	$ \left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) \right\} $
1b	$\{C = AB^T + BA^T + \hat{C} $

Step	Algorithm: $C = AB^T + BA^T + C$	
1a	$\{C=\widehat{C}$	}
4	$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL}}{C_{BL}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$	
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$	$\left. \right\}$
3	while $m(C_{TL}) < m(C)$ do	
2,3	$ \left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land m(C_{TL}) < m(C) $	
5a	Determine block size b $ \left(\begin{array}{c}A_T\\A_B\end{array}\right) \to \left(\begin{array}{c}A_0\\A_1^T\\A_2\end{array}\right), \left(\begin{array}{c}B_T\\B_B\end{array}\right) \to \left(\begin{array}{c}B_0\\B_1^T\\B_2\end{array}\right), \left(\begin{array}{c c}C_{TL}&C_{TR}\\C_{BL}&C_{BR}\end{array}\right) \to \left(\begin{array}{c c}C_{00}&C_{01}&C_{02}\\\hline C_{10}^T&C_{11}&C_{12}^T\\C_{20}&C_{21}&C_{22}\end{array}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$	
6	$ \begin{cases} \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & \widehat{C}_{01} & \widehat{C}_{02} \\ A_1^T B_0^T + \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 B_0^T + \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $	$\left. ight\}$
8	$C_{01} = A_0(B_1^T)^T + B_0(A_1^T)^T + C_{01}^T$ $C_{11} = A_1^T(B_1^T)^T + B_1^T(A_1^T)^T + C_{11}$ $C_{10}^T = B_1^T A_0^T + C_{10}^T$ $C_{20} = A_2(B_1^T)^T + C_{20}^T$ $C_{21} = A_2 B_0^T + A_1^T B_0^T + C_{20}^T$	
7	$ \begin{cases} \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10}^T & C_{11} & C_{12}^T \\ C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & A_0 (B_1^T)^T + B_0 (A_1^T)^T + \widehat{c}_{01} & \widehat{C}_{02} \\ A_1 B_0^T + B_1^T A_0^T + \widehat{C}_{10}^T & A_1^T (b_1^T)^T + B_1^T (A_1^T)^T + \widehat{C}_{11} & \widehat{C}_{12}^T \\ A_2 (b_1^T)^T + A_2 B_0^T + \widehat{C}_{20} & A_2 B_0^T + A_1^T B_0^T + \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $	$\left. ight\}$
5b	$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}}\right * \atop C_{BR}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{10} C_{11}}\right) \leftarrow \left(\frac{C_{TL}}{C_{20} C_{21}}\right)$	
2	$ \left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $	
	endwhile	
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C))$	
1b	$\{C = AB^T + BA^T + \widehat{C}$	}

Algorithm: $C = AB^T + BA^T + C$
$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL}}{C_{BL}} \frac{C_{TR}}{C_{BR}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is $0 imes 0$
while $m(C_{TL}) < m(C)$ do
Determine block size b $ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} \begin{vmatrix} C_{TR} \\ C_{BR} \end{vmatrix}\right) \to \left(\frac{C_{00}}{C_{01}} \begin{vmatrix} C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12} \\ C_{20} & C_{21} & C_{22} \end{vmatrix}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
$C_{01} = A_0(B_1^T)^T + B_0(A_1^T)^T + C_{01}^T$ $C_{11} = A_1^T(B_1^T)^T + B_1^T(A_1^T)^T + C_{11}$ $C_{10}^T = B_1^T A_0^T + C_{10}^T$ $C_{20} = A_2(B_1^T)^T + C_{20}^T$ $C_{21} = A_2 B_0^T + A_1^T B_0^T + C_{20}^T$
$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{C_{BL}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{02}}\right) \\ \frac{C_{TL}}{C_{BL}} \leftarrow \left(\frac{C_{00} C_{01}}{C_{10}}\right) \leftarrow \left(\frac{C_{02}}{C_{10}}\right) \\ \frac{C_{12}}{C_{20} C_{21}} \leftarrow \left(\frac{C_{02}}{C_{22}}\right) $
endwhile

Algorithm: $C = AB^T + BA^T + C$

$$A o \left(\frac{A_T}{A_B}\right), B o \left(\frac{B_T}{B_B}\right), C o \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right)$$

where A_T has 0 rows, B_T has 0 rows, C_{TL} is 0×0

while $m(C_{TL}) < m(C)$ do

Determine block size b

$$\left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c} A_0 \\ \hline A_1^T \\ A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c|c} B_0 \\ \hline B_1^T \\ B_2 \end{array}\right), \left(\begin{array}{c|c} C_{TL} & C_{TR} \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{c|c} C_{00} & C_{01} & C_{02} \\ \hline C_{10}^T & C_{11} & C_{12}^T \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right)$$

where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$

$$C_{01} = A_0(B_1^T)^T + B_0(A_1^T)^T + C_{01}^T$$

$$C_{11} = A_1^T (B_1^T)^T + B_1^T (A_1^T)^T + C_{11}$$

$$C_{10}^T = B_1^T A_0^T + C_{10}^T$$

$$C_{20} = A_2 (B_1^T)^T + C_{20}^T$$

$$C_{21} = A_2 B_0^T + A_1^T B_0^T + C_{20}^T$$

$$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right), \left(\frac{C_{TL}}{B_2}\right) \leftarrow \left(\frac{C_{TL}}{C_{BL}}\right) \leftarrow \left(\frac{C_{00} C_{01}}{C_{10} C_{11}}\right) \leftarrow \left(\frac{C_{02}}{C_{10} C_{11}}\right)$$

endwhile