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

Step	Algorithm: $C := AB^T + BA^T + C$		
1a	{		}
4			
	where		
2			}
3	while do		í
2,3		^	}
	Determine block size b		,
5a			
54			
	where		
6			}
			)
8			
7	{		}
5b			
2			}
	endwhile		
2,3		∧¬(	)
		· 	
1b	{		}

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

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\left  \{ C = \widehat{C} \right $
4	where
2	$ \left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \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} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land $
5a	Determine block size $b$ 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} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \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} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land \neg ( )  $
1b	$\left\{ C := AB^T + BA^T + \widehat{C}. \right\}$

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

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

Step	Algorithm: $C := AB^T + BA^T + C$	
1a	$\{C=\widehat{C}$	}
4	$C \to \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), A \to \left(\begin{array}{c c} A_T \\ \hline A_B \end{array}\right), B \to \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right)$ where $C_{BR}$ is $0 \times 0$ , $A_B$ and $B_B$ have 0 rows	
2	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	igg
3	while $m(C_{BR}) < m(C)$ do	
2,3	$ \left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge m(C_{BR}) < m(C) $	igg
5a	Determine block size $b$ $ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} C_{00} & * & * \\ \hline C_{10} & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c c} A_0 \\ \hline A_1 \\ \hline A_2 \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) $ where $C_{11}$ is $b \times b$ , $A_1$ and $B_1$ have $b$ row	
6		$\left. ight\}$
8		
7		$\left. \right\}$
5b	$\left( \begin{array}{c c} C_{BL} & C_{BR} \end{array} \right) \left( \begin{array}{c c} C_{20} & C_{21} & C_{22} \end{array} \right) \left( \begin{array}{c c} A_B \end{array} \right) \left( \begin{array}{c c} A_2 \end{array} \right) \left( \begin{array}{c c} B_B \end{array} \right) \left( \begin{array}{c c} B_2 \end{array} \right)$	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	
	endwhile	
2,3	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{BR}) < m(C))$	igg
1b	$\{C := AB^T + BA^T + \widehat{C}.$	}

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

1a  $\{C = \widehat{C}$ 

}

4  $C \rightarrow \left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right)$ ,  $A \rightarrow \left(\frac{A_T}{A_B}\right)$ ,  $B \rightarrow \left(\frac{B_T}{B_B}\right)$ 
where  $C_{BR}$  is  $0 \times 0$ ,  $A_B$  and  $B_B$  have 0 rows

2  $\left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BL}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \mid A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right)$ 

3 while  $m(C_{BR}) < m(C)$  do

2,3  $\left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \mid A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \wedge m(C_{BR}) < m(C)$ 

Determine block size  $b$ 

$$\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \rightarrow \left(\frac{A_0}{C_{20}} \mid C_{21} \mid C_{22}\right), \left(\frac{A_T}{A_B}\right) \rightarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_0}{B_1}\right)$$
where  $C_{11}$  is  $b \times b$ ,  $A_1$  and  $B_1$  have  $b$  row

6  $\left\{\left(\frac{C_{00}}{C_{00}} \mid \frac{*}{*}\right) + \left(\frac{C_{00}}{C_{10}} \mid C_{11} \mid \frac{*}{*}\right) + \left(\frac{A_0}{C_{20}} \mid C_{21} \mid C_{22}\right) + \left(\frac{A_0}{C_{20}} \mid C_{21} \mid C_{22}\right) + \left(\frac{A_0}{A_1} \mid A_2\right), \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_0}{B_1}\right) + \left$ 

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

1a  $\{C = \widehat{C}\}$ 

4  $C \to \begin{pmatrix} C_{TL} & * \\ C_{BL} & | C_{DR} \end{pmatrix}$ ,  $A \to \begin{pmatrix} A_T \\ A_B \end{pmatrix}$ ,  $B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}$ 
where  $C_{BR}$  is  $0 \times 0$ ,  $A_B$  and  $B_B$  have 0 rows

2  $\{\begin{pmatrix} C_{TL} & * \\ C_{BL} & | C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} \wedge m(C)$ 

3 while  $m(C_{RR}) < m(C)$  do

2,3  $\{\begin{pmatrix} C_{TL} & * \\ C_{DL} & | C_{BR} \end{pmatrix} \to \begin{pmatrix} \widehat{C}_{OD} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} \to \begin{pmatrix} \widehat{C}_{OD} & * \\ \widehat{C}_{BL} & | C_{BR} \end{pmatrix} \to \begin{pmatrix} \widehat{C}_{OD} & * \\ \widehat{C}_{DL} & | C_{DR} \end{pmatrix} \wedge m(C_{BR}) < m(C)$ 

Determine block size b

6  $\{\begin{pmatrix} C_{TL} & * \\ C_{BL} & | C_{BR} \end{pmatrix} \to \begin{pmatrix} C_{OD} & * & * \\ C_{OD} & * & * \\ C_{OD} & C_{21} & | C_{22} \end{pmatrix}, \begin{pmatrix} A_T \\ A_B \end{pmatrix} \to \begin{pmatrix} A_0 \\ A_1 \\ A_2 \end{pmatrix}, \begin{pmatrix} B_T \\ B_B \end{pmatrix} \to \begin{pmatrix} B_0 \\ B_1 \\ B_2 \end{pmatrix}$ 
where  $C_{11}$  is  $b \times b$ ,  $A_1$  and  $B_1$  have  $b$  row

6  $\{\begin{pmatrix} C_{UO} & * & * \\ C_{1D} & C_{11} & * \\ C_{2D} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{UO} & * & * \\ C_{UO} & * & * \\ C_{UO} & C_{11} & * \\ C_{2D} & C_{21} & A_2B_1^T + B_2A_1^T + \widehat{C}_{21} \end{pmatrix}$ 

7  $\{\begin{pmatrix} C_{UO} & * & * \\ C_{1D} & C_{11} & * \\ C_{2D} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{OO} & * & * \\ C_{1D} & A_1B_1^T + B_1A_1^T + \widehat{C}_{11} & * \\ C_{2D} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{OO} & * & * \\ C_{1D} & A_1B_1^T + B_1A_1^T + \widehat{C}_{11} & * \\ C_{2D} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{OO} & * & * \\ C_{ID} & C_{I1} & * \\ C_{ID} & C_{I1} & * \\ C_{ID} & C_{I1} & * \end{pmatrix} + \begin{pmatrix} C_{OO} & * & * \\ C_{ID} & C_{I1} & * \\ C_{ID} & C_{I1} & * \\ C_{ID} & C_{ID} & C_{ID} \end{pmatrix} + \begin{pmatrix} C_{ID} & * \\ C_{ID} & C_{ID} & * \\ C_{ID} & C_{ID} & C_{ID} & * \end{pmatrix} + \begin{pmatrix} A_T \\ A_B \end{pmatrix} \leftarrow \begin{pmatrix} A_0 \\ A_1 \\ A_2 \end{pmatrix}, \begin{pmatrix} B_T \\ B_B \end{pmatrix} \leftarrow \begin{pmatrix} B_0 \\ B_1 \\ B_2 \end{pmatrix}$ 

5 b  $\begin{pmatrix} C_{TL} & * \\ C_{BL} & C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{pmatrix} \wedge \neg (m(C_{BR}) < m(C))$ 

2 c  $\begin{pmatrix} C_{TL} & * \\ C_{BL} & C_{BR} \end{pmatrix} = \begin{pmatrix} \widehat{C}_{TL} & * \\ \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{pmatrix} \wedge \neg (m(C_{BR}) < m(C))$ 

1b  $\{C := AB^T + BA^T + \widehat{C} .$ 

Algorithm: $C := AB^T + BA^T + C$
$C \to \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), A \to \left(\begin{array}{c c} A_T \\ \hline A_B \end{array}\right), B \to \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right)$ where $C_{BR}$ is $0 \times 0$ , $A_B$ and $B_B$ have 0 rows
while $m(C_{BR}) < m(C)$ do
Determine block size $b$
$ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} C_{00} & * & * \\ \hline C_{10} & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline A_1 \\ \hline A_2 \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) $ where $C_{11}$ is $b \times b$ , $A_1$ and $B_1$ have $b$ row
, , , , , , , , , , , , , , , , , , , ,
$C_{11} := A_1 B_1^T + B_1 A_1^T + \widehat{C}_{11}$
$C_{21} := A_2 B_1^T + B_2 A_1^T + \widehat{C}_{21}$
$ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c} C_{00} & * & * \\ \hline C_{10} & C_{11} & * \\ \hline C_{20} & C_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c c} A_0 \\ \hline A_1 \\ \hline A_2 \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) $
endwhile

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

$$C \to \left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) , A \to \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) , B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$$

where  $C_{BR}$  is  $0 \times 0$ ,  $A_B$  and  $B_B$  have 0 rows

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

Determine block size b

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

where  $C_{11}$  is  $b \times b$ ,  $A_1$  and  $B_1$  have b row

$$C_{11} := A_1 B_1^T + B_1 A_1^T + \widehat{C}_{11}$$

$$C_{21} := A_2 B_1^T + B_2 A_1^T + \widehat{C}_{21}$$

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

endwhile