Step	Algorithm: $C := AB^T + BA^T + C$	
1a	$\{C=\widehat{C}$	}
	$C \to \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), A \to \left(\begin{array}{c c} A_T \\ \hline A_B \end{array}\right), B \to \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right)$ where $C_{BR}$ is $0 \times 0$ , $A_B$ and $B_B$ have 0 rows	
2	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	
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 A_B B_T^T + \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	$ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{c c} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right) $ where $\lambda_{11}$ is $1 \times 1$ , $a_1$ and $b_1$ have 1 row	
6	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & \lambda_{11} & * \\ A_{2}B_{0}^{T} + \widehat{C}_{20} & A_{2}b_{1} + \widehat{c}_{21} & A_{2}B_{2}^{T} + B_{2}A_{2}^{T} + \widehat{C}_{22} \end{pmatrix} $	
8	$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{10}^T := a_1^T B_0^T + C_{20}$ $c_{21} := B_2 a_1 + c_{21}$	
7	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{00} & * & * \\ a_1^T B_0^T + \hat{c}_{10}^T & a_1^T b_1 + b_1^T a_1 + \hat{\lambda}_{11} & * \\ A_2 B_0^T + \hat{C}_{20} & A_2 b_1 + B_2 a_1 + \hat{c}_{21} & A_2 B_2^T + B_2 A_2^T + \hat{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}^T & \lambda_{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^T \\ 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^T \\ 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 A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) $	
	endwhile	
2,3	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{BR}) < m(C))$	
1b	$\{C := AB^T + BA^T + \widehat{C}.$	}

Step	Algorithm: $C := AB^T + BA^T + C$	
1a	{	}
4		
	where	
2		
Δ.		
3	while do	
0.0		
2,3	^	
-		
5a		
	where	
6	{	
8		
7	{	
5b		
		$\supset$
2		
	endwhile	
		7
2,3	$\wedge \neg ( \hspace{1cm} )$	
1b	<u></u>	_/
τn	{	}

Step	Algorithm: $C := AB^T + BA^T + C$
1a	$\{C=\widehat{C}$
4	
	where
2	
3	while do
2,3	
5a	
	where
6	
8	
7	
5b	
90	
2	
	endwhile
2,3	
1b	$\{C := AB^T + BA^T + \widehat{C}.$

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

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

Т

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

Step	Algorithm: $C := AB^T + BA^T + C$	
1a	$\{C=\widehat{C}$	}
4	$C  o \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right), A  o \left(\begin{array}{c c} A_T \\ \hline A_B \end{array}\right), B  o \left(\begin{array}{c c} B_T \\ \hline B_B \end{array}\right)$ 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 A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) $	$oxed{\ }$
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 A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land m(C_{BR}) < m(C) $	$\left. \begin{array}{c} \\ \end{array} \right\}$
5a	$ \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}^T & \lambda_{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^T \\ \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^T \\ \hline B_2 \end{array}\right) $ where $\lambda_{11}$ is $1 \times 1$ , $a_1$ and $b_1$ have 1 row	
6		$\left \right\}$
8		
7		$\left. \begin{array}{c} \\ \end{array} \right\}$
5b	$\begin{pmatrix} C_{20} & C_{21} & C_{22} \end{pmatrix}$	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	$\left. \right\}$
	endwhile	
2,3	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \wedge \neg (m(C_{BR}) < m(C))$	$\left. \right\}$
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	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	$\left. \right\}$
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 A_B B_T^T + \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	where $\lambda_{11}$ is $1 \times 1$ , $a_1$ and $b_1$ have 1 row	
6	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{00} & * & * \\ c_{10}^T & \lambda_{11} & * \\ A_2B_0^T + \widehat{C}_{20} & A_2b_1 + \widehat{c}_{21} & A_2B_2^T + B_2A_2^T + \widehat{C}_{22} \end{pmatrix} $	$\left. \right\}$
8		
7		-
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}^T & \lambda_{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^T \\ 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^T \\ B_2 \end{array}\right) $	
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$	igg
	endwhile	
2,3	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline A_B B_T^T + \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{BR}) < m(C))$	$\bigg\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$	}

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

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

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

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

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

5a  $\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \to \left(\frac{\widehat{C}_{TL}}{C_{BL}} \mid \frac{*}{A_B B_T^T + \widehat{C}_{BL}} \mid A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \wedge m(C_{RR}) < m(C)$ 

5a  $\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \to \left(\frac{\widehat{C}_{TO}}{C_{TO}} \mid \frac{*}{A_1} \mid \frac{*}{A_2}\right)$ ,  $\left(\frac{A_T}{A_R}\right) \to \left(\frac{A_0}{a_1^T}\right)$ ,  $\left(\frac{B_T}{B_R}\right) \to \left(\frac{B_0}{b_1^T}\right)$ 
where  $\lambda_{11}$  is  $1 \times 1$ ,  $a_1$  and  $b_1$  have 1 row

6  $\left\{\left(\frac{C_{00}}{C_{00}} \mid \frac{*}{A_1} \mid \frac{*}{A_2}\right) = \left(\frac{C_{100}}{C_{10}} \mid A_{11} \mid \frac{*}{A_2}\right)$ 

$$\left(\frac{C_{10}}{C_{20}} \mid A_{21} \mid \frac{*}{A_2}\right) = \left(\frac{C_{100}}{C_{10}} \mid A_{11} \mid \frac{*}{A_2}\right)$$

$$\left(\frac{C_{10}}{C_{20}} \mid A_{21} \mid \frac{*}{A_2}\right) = \left(\frac{A_0}{A_2 b_1} + \widehat{C}_{21} \mid A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22}\right)$$

5b  $\left(\frac{C_{TL}}{C_{RL}} \mid \frac{*}{C_{20}}\right) = \left(\frac{C_{00}}{C_{20}} \mid \frac{*}{A_1}\right)$ 

$$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{a_1^T}\right)$$

$$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{B_T}{A_1}\right)$$

$$\left(\frac{B_T}{A_1}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right)$$

$$\left(\frac{B_0}{C_{20}} \mid A_{21} \mid \frac{*}{A_1}\right)$$

$$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{a_1^T}\right)$$

$$\left(\frac{B_T}{A_B}\right) \leftarrow \left(\frac{B_0}{B_1^T}\right)$$

$$\left(\frac{B_0}{A_1}\right) \leftarrow \left(\frac{B_0}{A_1}\right)$$

$$\left(\frac{B_0}{A_1}\right) = \left(\frac{B_0}{A_1}\right)$$

$$\begin{array}{lll} \text{Step} & \text{Algorithm: } C := AB^T + BA^T + C \\ 1a & \{C = \widehat{C} \\ \end{array} \\ & & C \rightarrow \left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right), \ A \rightarrow \left(\frac{A_T}{A_B}\right), \ B \rightarrow \left(\frac{B_T}{B_B}\right) \\ & & \text{where } C_{BR} \text{ is } 0 \times 0, \ A_B \text{ and } B_B \text{ have } 0 \text{ rows} \\ 2 & \left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BL}}\right) = \left(\frac{\widehat{C}_{TL}}{A_B B_T^H + \widehat{C}_{BL}} \mid A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ 3 & \text{while } m(C_{BR}) < m(C) \text{ do} \\ 2.3 & \left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{A_B B_T^H + \widehat{C}_{BL}} \mid A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \wedge m(C_{BR}) < m(C) \\ 5a & \left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \rightarrow \left(\frac{\widehat{C}_{00}}{A_1 11} \mid \frac{*}{*}\right) \\ & \left(\frac{C_{00}}{C_{BL}} \mid C_{BR}\right) \rightarrow \left(\frac{\widehat{C}_{00}}{C_{10}} \mid A_{11} \mid \frac{*}{*}\right) \\ & \left(\frac{C_{00}}{C_{10}} \mid A_{11} \mid \frac{*}{A_B}\right) \rightarrow \left(\frac{B_T}{A_B}\right) \\ & \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_T}{B_T}\right) \\ & \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_T}{B_B}\right) \\ & \left(\frac{B_$$

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
$ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \to \left(\begin{array}{c c} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \to \left(\begin{array}{c c} A_0 \\ \hline a_1^T \\ \hline A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right) $ where $\lambda_{11}$ is $1 \times 1$ , $a_1$ and $b_1$ have 1 row
$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{10}^T := a_1^T B_0^T + C_{20}$ $c_{21} := B_2 a_1 + c_{21}$
$ \left(\begin{array}{c c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c c c} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ 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^T \\ 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^T \\ 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

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c|c} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ \hline C_{20} & c_{21} & C_{22} \end{array}\right) , \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \rightarrow \left(\begin{array}{c} A_0 \\ \hline a_1^T \\ \hline A_2 \end{array}\right) , \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ \hline B_2 \end{array}\right)$$

where  $\lambda_{11}$  is  $1 \times 1$ ,  $a_1$  and  $b_1$  have 1 row

$$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$$

$$c_{10}^T := a_1^T B_0^T + C_{20}$$

$$c_{21} := B_2 a_1 + c_{21}$$

$$\left(\begin{array}{c|c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c} C_{00} & * & * \\ \hline c_{10}^T & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{array}\right), \left(\begin{array}{c} A_T \\ \hline A_B \end{array}\right) \leftarrow \left(\begin{array}{c|c} A_0 \\ \hline a_1^T \\ A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline b_1^T \\ B_2 \end{array}\right)$$

endwhile