		٦
Step	Algorithm: $C = AB^T + BA^T + \widehat{C}$	\downarrow
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 × 0	
2	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$	
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 \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) $	
5a	$ \left(\begin{array}{c} A_T \\ \overline{A_B} \end{array}\right) \to \left(\begin{array}{c} A_0 \\ \overline{a_1^T} \\ A_2 \end{array}\right), \left(\begin{array}{c} B_T \\ \overline{B_B} \end{array}\right) \to \left(\begin{array}{c} B_0 \\ \overline{b_1^T} \\ B_2 \end{array}\right), \left(\begin{array}{c} C_{TL} & C_{TR} \\ \overline{C_{BL}} & C_{BR} \end{array}\right) \to \left(\begin{array}{c} C_{00} & * & * \\ \overline{c_{10}} & \gamma_{11} & * \\ \overline{C_{20}} & c_{21} & C_{22} \end{array}\right) $ where a_1 has 1 row, b_1 has 1 row, γ_{11} is 1 × 1	
6	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & \gamma_{11} & * \\ 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}_{10}^{T} & \widehat{\gamma}_{11} & * \\ \widehat{C}_{20} & \widehat{c}_{21} & \widehat{C}_{22} \end{pmatrix} $	
8	$\gamma_{11} = a_1^T (b_1^T)^T + b_1^T (a_1^T)^T + \gamma_{11}$ $c_{10}^T = a_1 B_0^T + b_1^T A_0^T + c_{10}^T$	
7	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^T & \gamma_{11} & * \\ C_{20} & c_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & * & * \\ 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{\gamma}_{11} & * \\ \widehat{C}_{20} & \widehat{c}_{21} & \widehat{C}_{22} \end{pmatrix} $	
5b	$\begin{pmatrix} A_0 \end{pmatrix} \begin{pmatrix} A_0 \end{pmatrix} \begin{pmatrix} B_0 \end{pmatrix} \begin{pmatrix} B_0 \end{pmatrix} \begin{pmatrix} C_{00} * & * \end{pmatrix} * \end{pmatrix}$	
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 \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $	
	endwhile	
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge \neg (m(C_{TL}) < m(C))$	
1b	$\left\{ C = AB^T + BA^T + \widehat{C} \right\}$	

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

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

Step	Algorithm: $C = AB^T + BA^T + \widehat{C}$	
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 \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $	>
3	while $m(C_{TL}) < m(C)$ do	
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C)$	>
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 \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 \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) \right\} $	>
1b	$\left\{ C = AB^T + BA^T + \widehat{C} \right\}$	

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

Step	Algorithm: $C = AB^T + BA^T + \hat{C}$
1a	$\{C = \widehat{C}$
4	$A \to \left(\frac{A_T}{A_B}\right), B \to \left(\frac{B_T}{B_B}\right), C \to \left(\frac{C_{TL}}{C_{BL}}\right)$ 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 \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) $
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C) \right\}$
5a	$ \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_{DR} \\ C_{BR} \end{vmatrix}\right) \to \left(\frac{C_{00}}{c_{10}} \begin{vmatrix} * & * \\ c_{10} & \gamma_{11} & * \\ c_{20} & c_{21} & c_{22} \end{vmatrix}\right) $ where a_1 has 1 row, b_1 has 1 row, γ_{11} is 1×1
6	
8	
7	
5b	$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{a_1^T}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{b_1^T}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} * * *}{c_{10}^T \gamma_{11} * *}\right)$
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C))$
1b	$\{C = AB^T + BA^T + \widehat{C} $

Step	Algorithm: $C = AB^T + BA^T + \hat{C}$
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	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
3	while $m(C_{TL}) < m(C)$ do
2,3	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge m(C_{TL}) < m(C)$
5a	where a_1 has 1 row, b_1 has 1 row, γ_{11} is 1×1
6	$ \begin{cases} \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & \gamma_{11} & * \\ 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}_{10}^{T} & \widehat{\gamma}_{11} & * \\ \widehat{C}_{20} & \widehat{c}_{21} & \widehat{C}_{22} \end{pmatrix} $
8	
7	
5b	$\left(\frac{A_{T}}{A_{B}}\right) \leftarrow \left(\frac{A_{0}}{a_{1}^{T}}\right), \left(\frac{B_{T}}{B_{B}}\right) \leftarrow \left(\frac{B_{0}}{b_{1}^{T}}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} * * *}{c_{10}^{T} \gamma_{11} *}\right)$
2	$\left\{ \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right)$
	endwhile
2,3	$\left\{ \left(\begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left(\begin{array}{c c} A_T B_T^T + B_T A_T^T + \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \land \neg (m(C_{TL}) < m(C)) \right\}$
1b	$\left\{ C = AB^T + BA^T + \widehat{C} \right\}$

$$\begin{array}{c} \text{Step} & \text{Algorithm: } C = AB^T + BA^T + \widehat{C} \\ 1a & \{C = \widehat{C} \\ \\ 4 & A \rightarrow \left(\frac{A_T}{A_B}\right), B \rightarrow \left(\frac{B_T}{B_B}\right), C \rightarrow \left(\frac{C_{TL}}{C_{BL}} \right|_{C_{BR}} \\ \\ \text{where } A_T \text{ has 0 rows, } B_T \text{ has 0 rows, } C_{TL} \text{ is 0 } \times 0 \\ 2 & \left\{\left(\frac{C_{TL}}{C_{RL}} \right|_{C_{RR}}\right) = \left(\frac{A_T B_T^T + B_T A_T^T + \widehat{C}_{TL}}{\widehat{C}_{BL}} \right|_{E_{RR}} \\ \\ 3 & \text{while } m(C_{TL}) < m(C) \text{ do} \\ 2.3 & \left\{\left(\frac{C_{TL}}{C_{RL}}\right)^* + \left(\frac{A_0}{C_{RL}}\right)^* + \left(\frac{B_T}{C_{BL}}\right)^* + \left(\frac{B_T}{C_{BL}}\right)^* + \left(\frac{C_{TL}}{C_{RR}}\right)^* + \left(\frac{C_{TL}}{C_{RR}}\right)^*$$

Algorithm: $C = AB^T + BA^T + \widehat{C}$
$A \to \left(\frac{A_T}{A_B}\right), B \to \left(\frac{B_T}{B_B}\right), C \to \left(\frac{C_{TL}}{C_{BL}}\right)$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is 0×0
while $m(C_{TL}) < m(C)$ do
$ \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_{DR} \\ C_{BR} \end{vmatrix}\right) \to \left(\frac{C_{00}}{c_{10}^T} \begin{vmatrix} * & * \\ C_{20} \end{vmatrix} \begin{vmatrix} c_{21} & C_{22} \end{vmatrix}\right) $ where a_1 has 1 row, b_1 has 1 row, γ_{11} is 1×1
$\gamma_{11} = a_1^T (b_1^T)^T + b_1^T (a_1^T)^T + \gamma_{11}$ $c_{10}^T = a_1 B_0^T + b_1^T A_0^T + c_{10}^T$
$ \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_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} * * *}{c_{10}^T \gamma_{11} * *}\right) \\ \frac{c_{TL} C_{TR}}{C_{20} c_{21} C_{22}}\right) $
endwhile

Algorithm: $C = AB^T + BA^T + \widehat{C}$

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

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

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

$$\left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{a_1^T}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{b_1^T}\right), \left(\frac{C_{TL} \mid C_{TR}}{C_{BL} \mid C_{BR}}\right) \to \left(\frac{C_{00} \mid * \quad *}{c_{10}^T \mid \gamma_{11} \mid *}\right)$$

where a_1 has 1 row, b_1 has 1 row, γ_{11} is 1×1

$$\gamma_{11} = a_1^T (b_1^T)^T + b_1^T (a_1^T)^T + \gamma_{11}$$

$$c_{10}^T = a_1 B_0^T + b_1^T A_0^T + c_{10}^T$$

$$\left(\frac{A_{T}}{A_{B}}\right) \leftarrow \left(\frac{A_{0}}{a_{1}^{T}}\right), \left(\frac{B_{T}}{B_{B}}\right) \leftarrow \left(\frac{B_{0}}{b_{1}^{T}}\right), \left(\frac{C_{TL} | C_{TR}}{C_{BL} | C_{BR}}\right) \leftarrow \left(\frac{C_{00} * * *}{c_{10}^{T} \gamma_{11} | *}\right) \\
\frac{c_{10} | C_{10} | C_{21} | C_{22}}{C_{21} | C_{22}}\right)$$

endwhile