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	$\left\{ \left( \begin{array}{c c} C_{TL} & * \\ \hline C_{BL} & C_{BR} \end{array} \right) = \left( \begin{array}{c c} \widehat{C}_{TL} & * \\ \hline \widehat{C}_{BL} & A_B B_B^T + B_B A_B^T + \widehat{C}_{BR} \end{array} \right)$
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) \\ \right\} $
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	$ \left\{  \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} & * \\ C_{20} & c_{21} & A_2 B_2^T + B_2 A_2^T + \widehat{C}_{22} \end{pmatrix} $
8	$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$
7	$ \left\{  \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & \lambda_{11} & * \\ C_{20} & c_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} C_{00} & * & * \\ c_{10}^{T} & a_{1}^{T}b_{1} + b_{1}^{T}a_{1} + \widehat{\lambda}_{11} & * \\ C_{20} & A_{2}b_{1} + B_{2}a_{1} + \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}^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) $
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	,
2,3		
5a	where	
6		
8		
7		
5b		
2		$\bigg\}$
	endwhile	
2,3	$\bigg\{ \qquad \qquad \land \neg ($	
1b	{	}

Step	Algorithm: $C := AB^T + BA^T$	+C		
1a	${C = \widehat{C}}$			}
4	1			
2	where			}
3	while do			
2,3		$\wedge$		$\bigg\}$
5a	where			
6				$\bigg\}$
8				
7				
5b				
2				$\bigg\}$
	endwhile			
2,3		$\land \neg ($	)	$\Big\}$
1b	$\{C := AB^T + BA^T + \widehat{C}.$			}

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

$$\begin{array}{c} \text{Step} & \text{Algorithm: } C := AB^T + BA^T + C \\ 1\text{a} & \{C = \widehat{C} \\ \\ 4 & C \rightarrow \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BL}} \middle| 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}} \middle| \frac{*}{C_{BL}} \middle| 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 & \text{while } m(C_{BR}) < m(C) \text{ do} \\ 2,3 & \left\{\left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BL}} \middle| 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) \land m(C_{BR}) < m(C) \right. \\ 5\text{a} & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}} \middle| \right) \rightarrow \left(\frac{C_{00}}{\widehat{C}_{10}} \middle| \frac{*}{A_1} \middle| \frac{*}{A_1} \middle| \right) \\ & \left(\frac{A_T}{C_{BL}} \middle| C_{BR}\right) \rightarrow \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_0}{B_1^T} \middle| \frac{B_T}{A_B}\right) \\ & \left(\frac{C_{10}}{C_{20}} \middle| \frac{*}{C_{21}} \middle| C_{22}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}}\right) \leftarrow \left(\frac{B_0}{B_1^T} \middle| \frac{B_T}{A_B}\right) \\ & \left(\frac{B_T}{C_{20}} \middle| C_{21} \middle| C_{22}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \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) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| C_{BR}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| C_{BR}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \middle| A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}\right) \\ & \left(\frac{C_{TL}}{C_{BL}} \middle| C_{TL}\right) \\ & \left(\frac{C_{TL}}{C_{TL}} \middle| C_{TL}\right) \\ & \left$$

$$\begin{array}{llll} & & & & & \\ & & & & \\ & & & & \\ & & & \\ & & & \\ & & & \\ & \\ &$$

$$\begin{array}{lll} \text{Step} & \text{Algorithm: } C := AB^T + BA^T + C \\ 1 \text{a} & \{C = \widehat{C} \\ \\ 4 & C \rightarrow \left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BL}} \mid C_{BR} \right), \ A \rightarrow \left(\frac{A_T}{A_B}\right), \ B \rightarrow \left(\frac{B_T}{B_B}\right) \\ & \text{where } C_{BR} \text{ is } 0 \times 0, \ A_B \text{ and } B_B \text{ have } 0 \text{ rows} \\ \\ 2 & \left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BL}} \mid C_{BR}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \mid \frac{*}{A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}}\right) \right. \\ 3 & \text{while } m(C_{BR}) < m(C) \text{ do} \\ \\ 2,3 & \left\{\left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL}}{\widehat{C}_{BL}} \mid \frac{*}{A_B B_B^T + B_B A_B^T + \widehat{C}_{BR}}\right) \wedge m(C_{BR}) < m(C) \right. \\ 5 \text{a} & \left(\frac{C_{TL}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \rightarrow \left(\frac{C_{00}}{c_{10}^2} \mid \frac{*}{A_{11}} \mid \frac{*}{*}\right) \\ & \left(\frac{C_{00}}{C_{BL}} \mid \frac{*}{C_{BR}}\right) \rightarrow \left(\frac{C_{00}}{c_{10}^2} \mid \frac{*}{A_{11}}\right) \\ & \left(\frac{C_{00}}{C_{21}} \mid \frac{*}{C_{20}}\right) \\ & \left(\frac{C_{00}}{c_{21}$$

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
$\lambda_{11} := a_1^T b_1 + b_1^T a_1 + \lambda_{11}$ $c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$
$ \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

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

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

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

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

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

$$c_{21} := A_2 b_1 + B_2 a_1 + c_{21}$$

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

endwhile