Step	Algorithm:		
1a			
4			
	where		
2			
3	while do		
2,3		٨	
5a			
	where		
6			
8			
5b			
7			
2			
	endwhile		
2,3		^ ¬()
1b			

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) $
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) \wedge m(A_T) < m(A) $
5a	Determine block size b
	$ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \begin{pmatrix} \frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}} \\ \frac{C_{20} C_{21} C_{22} \end{pmatrix} = \begin{pmatrix} \frac{A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} \widehat{C}_{01} \widehat{C}_{02}}{\widehat{C}_{10}^T \widehat{C}_{12}^T} \\ \hline \widehat{C}_{20} \widehat{C}_{21} \widehat{C}_{22} \end{pmatrix} $
8	$C_{01} = A_0 B_1^T + B_0 A_1^T + C_{01}$ $C_{10}^T = C_{01}^T$ $C_{11} = A_1 B_1^T + B_1 A_1^T + C_{11}$
5b	$\left(\frac{A_{T}}{A_{B}}\right) \leftarrow \left(\frac{A_{0}}{A_{1}}\right), \left(\frac{B_{T}}{B_{B}}\right) \leftarrow \left(\frac{B_{0}}{B_{1}}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right)$
7	$ \begin{pmatrix} \frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}} \\ \frac{C_{20} C_{21} C_{22}}{C_{20} C_{21} C_{22}} \end{pmatrix} = \begin{pmatrix} \frac{A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} A_0 B_1^T + B_0 A_1^T + \widehat{C}_{01} \widehat{C}_{02}}{A_1 B_0^T + B_1 A_0^T + \widehat{C}_{10} A_1 B_1^T + B_1 A_1^T + \widehat{C}_{11} \widehat{C}_{12}^T} \\ \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} \right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) $
	endwhile
2,3	$ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) \wedge \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Algorithm: $[C] := SYRK2_BLK_VAR3(A, B, C)$

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

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

while $m(A_T) < m(A)$ do

Determine block size b

$$\left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right)$$

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

$$C_{01} = A_0 B_1^T + B_0 A_1^T + C_{01} C_{10}^T = C_{01}^T C_{11} = A_1 B_1^T + B_1 A_1^T + C_{11}$$

$$\left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL}|C_{TR}}{C_{BL}|C_{BR}}\right) \leftarrow \left(\frac{C_{00}|C_{01}|C_{02}}{C_{10}|C_{11}|C_{12}}\right)$$

endwhile

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
1a	$C = \widehat{C}$
4	
4	
	where
2	
2	
3	while do
2,3	\wedge
5a	Determine block size
	1
	where
6	
Ů	
8	
5b	
0.0	
7	
•	
2	
	endwhile endwhile
2,3	$\wedge \neg (\hspace{1cm})$
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
1a	$C = \widehat{C}$
4	
	where
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} \right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) $
3	while do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BR} \end{vmatrix} \right) \wedge $
5a	Determine block size
	where
	WHOLE
6	
8	
5b	
7	
2	$\left(\frac{C_{TL}}{C_{BL}} \frac{C_{TR}}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \widehat{C}_{BR}\right)$
	endwhile
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) \land \neg () $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
1a	$C = \widehat{C}$
4	
	where
2	$\left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right)$
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{TR} \right) \wedge m(A_T) < m(A) $
5a	Determine block size
	where
6	
O	
8	
0	
5b	
96	
7	
1	
	$\left(\begin{array}{cccccccccccccccccccccccccccccccccccc$
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \right) $
	endwhile
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{BR} \right) \land \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL}}{C_{BL}} \frac{C_{TR}}{C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \frac{\widehat{C}_{TR}}{\widehat{C}_{BR}}\right) $
3	while $m(A_T) < m(A)$ do
2,3	$\left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \right) \wedge m(A_T) < m(A)$
5a	Determine block size
	where
6	
O	
8	
8	
5b	
30	
-	
7	
2	$ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \widehat{C}_{BR}\right) $
	endwhile
2,3	$\left \begin{array}{c c} C_{TL} & C_{TR} \\ \hline C_{BL} & C_{BR} \end{array} \right = \left(\begin{array}{c c} \widehat{C}_{TL} + A_T B_T^T + B_T A_T^T & \widehat{C}_{TR} \\ \hline \widehat{C}_{BL} & \widehat{C}_{BR} \end{array} \right) \wedge \neg (m(A_T) < m(A))$
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} \right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \widehat{C}_{BR}\right) $
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{TR} \right) \wedge m(A_T) < m(A) $
5a	Determine block size b
	$ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	
8	
5b	$\left(\frac{A_{T}}{A_{B}}\right) \leftarrow \left(\frac{A_{0}}{A_{1}}\right), \left(\frac{B_{T}}{B_{B}}\right) \leftarrow \left(\frac{B_{0}}{B_{1}}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right)$
7	
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) $
	endwhile
2,3	$ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) \wedge \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) $
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{TR} \right) \wedge m(A_T) < m(A) $
5a	Determine block size b
	$ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) $ where A has brown B has brown C is by b
	where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12} \\ 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} \\ \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
8	
5b	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) \\ \frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{21} C_{22}}\right) $
7	
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}} \right) $
	endwhile
2,3	$ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL} \widehat{C}_{BR}}\right) \wedge \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T \widehat{C}_{TR}}{\widehat{C}_{BL}}\right) $
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{TR} \right) \wedge m(A_T) < m(A) $
5a	Determine block size b
	$ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) $
	where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
6	$ \begin{pmatrix} C_{00} & C_{01} & C_{02} \\ C_{10} & C_{11} & C_{12} \\ 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} \\ \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix} $
8	
5b	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL}}{C_{BL}}C_{TR}\right) \leftarrow \left(\frac{C_{00}}{C_{01}}C_{02}\right) \\ \left(\frac{C_{00}}{C_{01}}C_{02}\right) \leftarrow \left(\frac{A_0B_0^T + B_0A_0^T + \widehat{C_{00}}}{A_0B_0^T + B_0A_0^T + \widehat{C_{01}}\widehat{C_{00}}}\right) $
7	$ \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}} \right) = \left(\frac{A_{0} B_{0}^{T} + B_{0} A_{0}^{T} + C_{00} A_{0} B_{1}^{T} + B_{0} A_{1}^{T} + C_{01} C_{02} }{A_{1} B_{0}^{T} + B_{1} A_{0}^{T} + \widehat{C}_{10} A_{1} B_{1}^{T} + B_{1} A_{1}^{T} + \widehat{C}_{11} \widehat{C}_{12}^{T}} \right) $
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) $
	endwhile
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \wedge \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
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(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BL} \end{vmatrix} \right) $
3	while $m(A_T) < m(A)$ do
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{TR} \right) \wedge m(A_T) < m(A) $
5a	Determine block size b
	$ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL}}{C_{BL}}\right) \to \left(\frac{C_{00}}{C_{10}}\right) \to \left(\frac{C_{10}}{C_{10}}\right) \to \left(C$
6	$\begin{pmatrix} C_{00} & C_{01} & C_{02} \\ \hline C_{10} & C_{11} & C_{12} \\ \hline C_{20} & C_{21} & C_{22} \end{pmatrix} = \begin{pmatrix} A_0 B_0^T + B_0 A_0^T + \widehat{C}_{00} & \widehat{C}_{01} & \widehat{C}_{02} \\ \hline \widehat{C}_{10}^T & \widehat{C}_{11} & \widehat{C}_{12}^T \\ \hline \widehat{C}_{20} & \widehat{C}_{21} & \widehat{C}_{22} \end{pmatrix}$
8	$C_{01} = A_0 B_1^T + B_0 A_1^T + C_{01}$ $C_{10}^T = C_{01}^T$ $C_{11} = A_1 B_1^T + B_1 A_1^T + C_{11}$
5b	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) $
7	$ \begin{pmatrix} \frac{A_T}{A_B} \end{pmatrix} \leftarrow \begin{pmatrix} \frac{A_0}{A_1} \\ \overline{A_2} \end{pmatrix}, \begin{pmatrix} \frac{B_T}{B_B} \end{pmatrix} \leftarrow \begin{pmatrix} \frac{B_0}{B_1} \\ \overline{B_2} \end{pmatrix}, \begin{pmatrix} \frac{C_{TL}}{C_{BL}} C_{TR} \\ \overline{C_{BL}} C_{BR} \end{pmatrix} \leftarrow \begin{pmatrix} \frac{C_{00}}{C_{01}} C_{02} \\ \overline{C_{10}} C_{11} C_{12} \\ \overline{C_{20}} C_{21} C_{22} \end{pmatrix} $ $ \begin{pmatrix} \frac{C_{00}}{C_{01}} C_{02} \\ \overline{C_{10}} C_{11} C_{12} \\ \overline{C_{20}} C_{21} C_{22} \end{pmatrix} = \begin{pmatrix} \frac{A_0 B_0^T + B_0 A_0^T + \widehat{C_{00}}}{A_0 B_1^T + B_0 A_1^T + \widehat{C_{01}}} \widehat{C_{02}} \\ \overline{A_1 B_0^T + B_1 A_0^T + \widehat{C_{10}}} A_1 B_1^T + B_1 A_1^T + \widehat{C_{11}} \widehat{C_{12}} \\ \overline{C_{20}} \end{pmatrix} $
2	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \begin{vmatrix} \widehat{C}_{TR} \\ \widehat{C}_{BR} \end{vmatrix}\right) $
	endwhile
2,3	$ \left(\frac{C_{TL}}{C_{BL}} \begin{vmatrix} C_{TR} \\ C_{BL} \end{vmatrix} = \left(\frac{\widehat{C}_{TL} + A_T B_T^T + B_T A_T^T}{\widehat{C}_{BL}} \widehat{C}_{BR} \right) \land \neg (m(A_T) < m(A)) $
1b	$[C] = \operatorname{syrk2}(A, B, \widehat{C})$

Step	Algorithm: $[C] := \text{SYRK2_BLK_VAR3}(A, B, C)$
	$A \to \begin{pmatrix} A_T \\ A_B \end{pmatrix}, B \to \begin{pmatrix} B_T \\ B_B \end{pmatrix}, C \to \begin{pmatrix} C_{TL} & C_{TR} \\ C_{BL} & C_{BR} \end{pmatrix}$ where A_T has 0 rows, B_T has 0 rows, C_{TL} is 0×0
	while $m(A_T) < m(A)$ do
	Determine block size b $ \left(\frac{A_T}{A_B}\right) \to \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL}}{C_{BL}} C_{TR}\right) \to \left(\frac{C_{00}}{C_{10}} C_{01} C_{02}\right) $ where A_1 has b rows, B_1 has b rows, C_{11} is $b \times b$
	$C_{01} = A_0 B_1^T + B_0 A_1^T + C_{01}$ $C_{10}^T = C_{01}^T$ $C_{11} = A_1 B_1^T + B_1 A_1^T + C_{11}$
	$ \left(\frac{A_T}{A_B}\right) \leftarrow \left(\frac{A_0}{A_1}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) \\ \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{21} C_{22}}\right) $
	endwhile

Algorithm: $[C] := SYRK2_BLK_VAR3(A, B, C)$

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

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

while $m(A_T) < m(A)$ do

Determine block size b

$$\left(\frac{A_{T}}{A_{B}}\right) \to \left(\frac{A_{0}}{A_{1}}\right), \left(\frac{B_{T}}{B_{B}}\right) \to \left(\frac{B_{0}}{B_{1}}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \to \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right)$$

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

$$\mathbf{C}_{01} = A_0 B_1^T + B_0 A_1^T + C_{01} C_{10}^T = C_{01}^T C_{11} = A_1 B_1^T + B_1 A_1^T + C_{11}$$

$$\left(\frac{A_{T}}{A_{B}}\right) \leftarrow \left(\frac{A_{0}}{A_{1}}\right), \left(\frac{B_{T}}{B_{B}}\right) \leftarrow \left(\frac{B_{0}}{B_{1}}\right), \left(\frac{C_{TL} C_{TR}}{C_{BL} C_{BR}}\right) \leftarrow \left(\frac{C_{00} C_{01} C_{02}}{C_{10} C_{11} C_{12}}\right) \\
\frac{C_{10} C_{11} C_{12}}{C_{20} C_{21} C_{22}}\right)$$

endwhile