Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows
2	$\left\{C = A_T^T A_T + \widehat{C} \right.$ $\left.\right\}$
3	while $m(A_T) < m(A)$ do
2,3	$\left\{ \quad C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A) \right.$ $\left.\right\}$
5a	$\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\dfrac{A_0}{\begin{array}{c} a_1^T \\ \hline A_2 \end{array}} \right)$ where a_1 has 1 row
6	$\left\{ \quad C = A_0^T A_0 + \widehat{C} \right.$ $\left.\right\}$
8	$\quad C = a_1^T a_1 + C$
7	$\left\{ \quad C = A_0^T A_0 + a_1^T a_1 + \widehat{C} \right.$ $\left.\right\}$
5b	$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{\begin{array}{c} A_0 \\ \hline a_1^T \end{array}}{A_2} \right)$
2	$\left\{ \quad C = A_T^T A_T + \widehat{C} \right.$ $\left.\right\}$
	endwhile
2,3	$\left\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A)) \right.$ $\left.\right\}$
1b	$\left\{[C] = \text{syrk\_ac}(A, \widehat{C}) \right.$ $\left.\right\}$

Step	Algorithm: $[C] := $ SYRK_AC_UNB_VAR2(A, C)
1a	{ }
4	where
2	{ }
3	while do
2,3	{ $\wedge$ }
5a	where
6	{ }
8	
7	{ }
5b	
2	{ }
	endwhile
2,3	{ $\wedge \neg($ $)$ }
1b	{ }

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\{$ $\}$
3	while do
2,3	$\{$ $\wedge$ $\}$
5a	where
6	$\{$ $\}$
8	
7	$\{$ $\}$
5b	
2	$\{$ $\}$
	endwhile
2,3	$\{$ $\wedge \neg ($ $)$ $\}$
1b	$\left\{ [C] = \text{syrk\_ac}(A, \widehat{C}) \right.$ $\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{C = A_T^T A_T + \widehat{C}\right.$ $\left.\right\}$
3	while do
2,3	$\left\{\quad C = A_T^T A_T + \widehat{C} \wedge \right.$ $\left.\right\}$
5a	where
6	$\{$ $\}$
8	
7	$\{$ $\}$
5b	
2	$\{\quad C = A_T^T A_T + \widehat{C}$ $\}$
	endwhile
2,3	$\left\{C = A_T^T A_T + \widehat{C} \wedge \neg(\qquad)\right.$ $\left.\right\}$
1b	$\left\{[C] = \text{syrk\_ac}(A, \widehat{C})\right.$ $\left.\right\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	where
2	$\left\{C = A_T^T A_T + \widehat{C}\right.$ $\left.\right\}$
3	while $m(A_T) < m(A)$ do
2,3	$\left\{\quad C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A)\right.$ $\left.\right\}$
5a	where
6	$\{$ $\}$
8	
7	$\{$ $\}$
5b	
2	$\{\quad C = A_T^T A_T + \widehat{C}$ $\}$
	endwhile
2,3	$\left\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A))\right.$ $\left.\right\}$
1b	$\left\{[C] = \text{syrk\_ac}(A, \widehat{C})\right.$ $\left.\right\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows
2	$\left\{ C = A_T^T A_T + \widehat{C} \right.$ $\}$
3	while $m(A_T) < m(A)$ do
2,3	$\left\{ \quad C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A) \right.$ $\}$
5a	 where
6	$\{$ $\}$
8	
7	$\{$ $\}$
5b	
2	$\left\{ \quad C = A_T^T A_T + \widehat{C} \right.$ $\}$
	endwhile
2,3	$\left\{ C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A)) \right.$ $\}$
1b	$\left\{ [C] = \text{syrk\_ac}(A, \widehat{C}) \right.$ $\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	$A \to \left(\dfrac{A_T}{A_B}\right)$ where A_T has 0 rows
2	$\{C = A_T^T A_T + \widehat{C}$ $\}$
3	while $m(A_T) < m(A)$ do
2,3	$\{$ $C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A)$ $\}$
5a	$\left(\dfrac{A_T}{A_B}\right) \to \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}}\right)$ where a_1 has 1 row
6	$\{$ $\}$
8	
7	$\{$ $\}$
5b	$\left(\dfrac{A_T}{A_B}\right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}}\right)$
2	$\{$ $C = A_T^T A_T + \widehat{C}$ $\}$
	endwhile
2,3	$\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A))$ $\}$
1b	$\{[C] = \text{syrk\_ac}(A, \widehat{C})$ $\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\hspace{10cm}\}$
4	$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows
2	$\{C = A_T^T A_T + \widehat{C}$ $\hspace{8cm}\}$
3	while $m(A_T) < m(A)$ do
2,3	$\{\hspace{0.5cm} C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A)$ $\hspace{5cm}\}$
5a	$\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$ where a_1 has 1 row
6	$\{\hspace{0.5cm} C = A_0^T A_0 + \widehat{C}$ $\hspace{7cm}\}$
8	
7	$\{$ $\hspace{11cm}\}$
5b	$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$
2	$\{\hspace{0.5cm} C = A_T^T A_T + \widehat{C}$ $\hspace{7cm}\}$
	endwhile
2,3	$\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A))$ $\hspace{3cm}\}$
1b	$\{[C] = \text{syrk\_ac}(A, \widehat{C})$ $\hspace{6cm}\}$

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ }
4	$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows
2	$\{C = A_T^T A_T + \widehat{C}$ }
3	while $m(A_T) < m(A)$ do
2,3	$\{\quad C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A)$ }
5a	$\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$ where a_1 has 1 row
6	$\{\quad C = A_0^T A_0 + \widehat{C}$ }
8	
7	$\{\quad C = A_0^T A_0 + a_1^T a_1 + \widehat{C}$ }
5b	$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$
2	$\{\quad C = A_T^T A_T + \widehat{C}$ }
	endwhile
2,3	$\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A))$ }
1b	$\{[C] = \text{syrk\_ac}(A, \widehat{C})$ }

Step	Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows
2	$\{C = A_T^T A_T + \widehat{C}$ $\}$
3	while $m(A_T) < m(A)$ do
2,3	$\left\{ \quad C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A) \right.$ $\}$
5a	$\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$ where a_1 has 1 row
6	$\left\{ \quad C = A_0^T A_0 + \widehat{C} \right.$ $\}$
8	$\textcolor{red}{C = a_1^T a_1 + C}$
7	$\left\{ \quad C = A_0^T A_0 + a_1^T a_1 + \widehat{C} \right.$ $\}$
5b	$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$
2	$\left\{ \quad C = A_T^T A_T + \widehat{C} \right.$ $\}$
	endwhile
2,3	$\left\{ C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A)) \right.$ $\}$
1b	$\left\{ [C] = \text{syrk\_ac}(A, \widehat{C}) \right.$ $\}$

Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR2}(A, C)$	
$A \to \left(\dfrac{A_T}{A_B} \right)$ where A_T has 0 rows	
while $m(A_T) < m(A)$ do	
$\left(\dfrac{A_T}{A_B} \right) \to \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$ where a_1 has 1 row	
$C = a_1^T a_1 + C$	
$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$	
endwhile	

Algorithm: $[C] := \text{SYRK\_AC\_UNB\_VAR}2(A, C)$

$A \rightarrow \left(\dfrac{A_T}{A_B} \right)$

where A_T has 0 rows

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

$$\left(\dfrac{A_T}{A_B} \right) \rightarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$$

where a_1 has 1 row

$C = a_1^T a_1 + C$

$$\left(\dfrac{A_T}{A_B} \right) \leftarrow \left(\dfrac{A_0}{\dfrac{a_1^T}{A_2}} \right)$$

endwhile