

Step	Algorithm: $[C] := \text{SYRK_AC_BLK_VAR2}(A, C)$
1a	$\{C = \widehat{C}$ $\}$
4	$A \rightarrow \begin{pmatrix} A_T \\ A_B \end{pmatrix}$ <p style="text-align: center;">where A_T has 0 rows</p>
2	$\{C = A_T^T A_T + \widehat{C}$ $\}$
3	while $m(A_T) < m(A)$ do
2,3	$\left\{ \begin{array}{l} C = A_T^T A_T + \widehat{C} \wedge m(A_T) < m(A) \end{array} \right\}$
5a	<p style="text-align: center;">Determine block size b</p> $\begin{pmatrix} A_T \\ A_B \end{pmatrix} \rightarrow \begin{pmatrix} A_0 \\ A_1 \\ A_2 \end{pmatrix}$ <p style="text-align: center;">where A_1 has b rows</p>
6	$\left\{ \begin{array}{l} C = A_0^T A_0 + \widehat{C} \end{array} \right\}$
8	$C = A_1^T A_1 + C$
7	$\left\{ \begin{array}{l} C = A_0^T A_0 + A_1^T A_1 + \widehat{C} \end{array} \right\}$
5b	$\begin{pmatrix} A_T \\ A_B \end{pmatrix} \leftarrow \begin{pmatrix} A_0 \\ A_1 \\ A_2 \end{pmatrix}$
2	$\left\{ \begin{array}{l} C = A_T^T A_T + \widehat{C} \end{array} \right\}$
	endwhile
2,3	$\{C = A_T^T A_T + \widehat{C} \wedge \neg(m(A_T) < m(A))$ $\}$
1b	$\{[C] = \text{syrk_ac}(A, \widehat{C})$ $\}$

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Determine block size b

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$$C = A_1^T A_1 + C$$

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