Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \to \left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where L_{BR} is 0×0, B_B has 0 rows
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size** b $\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \to \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$ where L_{11} is $b \times b$, B_1 has b rows
6	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline B_1 \\ \hline L_{22}\widehat{B}_2 \end{array}\right)$
8	
5b	$\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$
7	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline L_{11}\widehat{B}_1 \\ \hline L_{21}\widehat{B}_1 + L_{22}\widehat{B}_2 \end{array}\right)$
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Algorithm: $[B] := \text{TRMM\_BLK\_VAR}1(L, B)$

$$L \rightarrow \left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right), B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$$

where L_{BR} is 0×0, B_B has 0 rows

while $m(L_{BR}) < m(L)$ do

Determine block size b

$$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$$

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

$B_2 := L_{21}B_1 + B_2 B_1 := L_{11}B_1$

$$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$$

endwhile

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	where
2	
3	while do
2,3	$\wedge$
5a	**Determine block size** where
6	
8	
5b	
7	
2	
	endwhile
2,3	$\wedge \neg ($ $)$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	where
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while do
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge$
5a	**Determine block size** where
6	
8	
5b	
7	
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg(\qquad\qquad)$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	where
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size** where
6	
8	
5b	
7	
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \rightarrow \left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where L_{BR} is 0×0, B_B has 0 rows
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size** where
6	
8	
5b	
7	
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \rightarrow \left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where L_{BR} is 0×0, B_B has 0 rows
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size b** $\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$ where L_{11} is $b \times b$, B_1 has b rows
6	
8	
5b	$\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$
7	
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \to \left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right)$, $B \to \left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right)$ where L_{BR} is 0×0, B_B has 0 rows
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size b** $\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \to \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$ where L_{11} is $b \times b$, B_1 has b rows
6	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline B_1 \\ \hline L_{22}\widehat{B}_2 \end{array}\right)$
8	
5b	$\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$
7	
2	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right)$
	endwhile
2,3	$\left(\begin{array}{c} B_T \\ \hline B_B \end{array}\right) = \left(\begin{array}{c} \widehat{B}_T \\ \hline \widehat{B}_B \end{array}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \to \left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right)$, $B \to \left(\frac{B_T}{B_B}\right)$ where L_{BR} is 0×0, B_B has 0 rows
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size** b $\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \to \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\frac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$ where L_{11} is $b \times b$, B_1 has b rows
6	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline B_1 \\ \hline L_{22}\widehat{B}_2 \end{array}\right)$
8	
5b	$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\frac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$
7	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline L_{11}\widehat{B}_1 \\ \hline L_{21}\widehat{B}_1 + L_{22}\widehat{B}_2 \end{array}\right)$
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
1a	$B = \widehat{B}$
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2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while $m(L_{BR}) < m(L)$ do
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge m(L_{BR}) < m(L)$
5a	**Determine block size b** $\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \to \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \to \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$ where L_{11} is $b \times b$, B_1 has b rows
6	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline B_1 \\ \hline L_{22}\widehat{B}_2 \end{array}\right)$
8	
5b	$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array}\right) \leftarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array}\right)$, $\left(\dfrac{B_T}{B_B}\right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right)$
7	$\left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) = \left(\begin{array}{c} \widehat{B}_0 \\ \hline L_{11}\widehat{B}_1 \\ \hline L_{21}\widehat{B}_1 + L_{22}\widehat{B}_2 \end{array}\right)$
2	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\dfrac{B_T}{B_B}\right) = \left(\dfrac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg(m(L_{BR}) < m(L))$
1b	$[B] = \text{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM\_BLK\_VAR1}(L, B)$
	$L \rightarrow \left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right)$, $B \rightarrow \left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right)$ where $\quad L_{BR}$ is 0×0, B_B has 0 rows
	while $m(L_{BR}) < m(L)$ do
	Determine block size b $\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$ where $\quad L_{11}$ is $b \times b$, B_1 has b rows
	$\left(\begin{array}{c\|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c\|c\|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array} \right)$, $\left(\begin{array}{c} B_T \\ \hline B_B \end{array} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$
	endwhile

Algorithm: $[B] := \text{TRMM\_BLK\_VAR}1(L, B)$

$$L \rightarrow \left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right), \; B \rightarrow \left(\frac{B_T}{B_B} \right)$$

where L_{BR} is 0×0, B_B has 0 rows

while $m(L_{BR}) < m(L)$ do

Determine block size b

$$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right) \rightarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array} \right), \; \left(\frac{B_T}{B_B} \right) \rightarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$$

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

$B_2 := L_{21}B_1 + B_2 B_1 := L_{11}B_1$

$$\left(\begin{array}{c|c} L_{TL} & L_{TR} \\ \hline L_{BL} & L_{BR} \end{array} \right) \leftarrow \left(\begin{array}{c|c|c} L_{00} & L_{01} & L_{02} \\ \hline L_{10} & L_{11} & L_{12} \\ \hline L_{20} & L_{21} & L_{22} \end{array} \right), \; \left(\frac{B_T}{B_B} \right) \leftarrow \left(\begin{array}{c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array} \right)$$

endwhile