Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \hat{B}$
4	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ 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) \rightarrow \left(\begin{array}{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 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(\frac{B_0}{B_1}\right) = \left(\frac{\widehat{B_0}}{B_1}\right) = \left(\frac{\widehat{B_0}}{L_{22}\widehat{B_2}}\right) $
8	
5b	$ \left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \leftarrow \left(\frac{L_{00}}{L_{10}} \begin{vmatrix} L_{01} \\ L_{11} \end{vmatrix} L_{12} \\ L_{20} \begin{vmatrix} L_{21} \\ L_{22} \end{vmatrix} \right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1} \\ B_2\right) $
7	$ \left(\frac{B_0}{B_1}\atop B_2\right) = \left(\frac{\widehat{B_0}}{L_{11}\widehat{B_1}}\atop L_{21}\widehat{B_1} + L_{22}\widehat{B_2}\right) $
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge \neg (m(L_{BR}) < m(L))$
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

 $\textbf{Algorithm:} \ [B] := \texttt{TRMM_BLK_VAR1}(L,B)$

$$L
ightarrow \left(rac{L_{TL}}{L_{BL}} \left| L_{TR} \right| \right), \ B
ightarrow \left(rac{B_T}{B_B} \right)$$

where L_{BR} is 0×0 , B_B has 0 rows

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

Determine block size b

$$\left(\frac{L_{TL} \mid L_{TR}}{L_{BL} \mid L_{BR}}\right) \to \left(\frac{L_{00} \mid L_{01} \mid L_{02}}{L_{10} \mid L_{11} \mid L_{12}}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right)$$

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

$$B_2 := L_{21}B_1 + B_2B_1 := L_{11}B_1$$

$$\left(\frac{L_{TL} \mid L_{TR}}{L_{BL} \mid L_{BR}}\right) \leftarrow \left(\frac{L_{00} \mid L_{01} \mid L_{02}}{L_{10} \mid L_{11} \mid L_{12}}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right) \\
\frac{1}{B_2} = \frac{1}{B_2} \left(\frac{B_1}{B_2}\right) + \frac{1}{B_2} \left(\frac{B_1}$$

endwhile

Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	
4	
	where
2	
_	
3	while do
2,3	\wedge
5a	Determine block size
	where
6	
8	
5b	
7	
2	
2	
	endwhile
9.9	$\Lambda = ($
2,3	$\wedge \neg (\hspace{1cm})$
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \hat{B}$
4	
2	where $\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
3	while do
2,3	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \wedge$
5a	Determine block size
	where
6	
8	
5b	
7	
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) \land \neg () $
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	zzh oue
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
	where
	WHELE
6	
8	
5b	
7	
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$ \left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \land \neg (m(L_{BR}) < m(L)) $
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ where L_{BR} is 0×0 , B_B has 0 rows
2	where L_{BR} is 0×0 , B_B has 0 rows $ \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) $ Determine block size
5a	Determine block size
	where
6	
U	
8	
0	
E.b.	
5b	
7	
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$ \left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \land \neg (m(L_{BR}) < m(L)) $
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := TRMM_BLK_VAR1(L, B)$
1a	$B = \hat{B}$
4	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ 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} \\ L_{BL} & L_{BR} \end{array}\right) \rightarrow \left(\begin{array}{c c} L_{00} & L_{01} & L_{02} \\ L_{10} & L_{11} & L_{12} \\ L_{20} & L_{21} & L_{22} \end{array}\right), \left(\begin{array}{c} B_T \\ B_B \end{array}\right) \rightarrow \left(\begin{array}{c c} B_0 \\ B_1 \\ B_2 \end{array}\right) $ where L_{11} is $b \times b$, B_1 has b rows
6	
8	
5b	$\left(\frac{L_{TL}}{L_{BL}} \Big L_{TR} \right) \leftarrow \left(\frac{L_{00}}{L_{10}} \Big L_{02} \\ \frac{L_{10}}{L_{21}} \Big L_{12} \\ \frac{L_{20}}{L_{21}} \Big L_{22} \right), \left(\frac{B_T}{B_B} \right) \leftarrow \left(\frac{B_0}{B_1} \right)$
7	
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \land \neg (m(L_{BR}) < m(L))$
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := TRMM_BLK_VAR1(L, B)$
1a	$B = \hat{B}$
4	$L o \left(\frac{L_{TL}}{L_{BL}} \frac{L_{TR}}{L_{BR}}\right), B o \left(\frac{B_T}{B_B}\right)$ where L_{TR} is $0 imes 0$ rows
2	where L_{BR} is 0×0 , B_B has 0 rows $ \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
	$\left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \right) \rightarrow \left(\frac{L_{00}}{L_{10}} \begin{vmatrix} L_{01} \\ L_{11} \end{vmatrix} \begin{vmatrix} L_{12} \\ L_{22} \end{vmatrix} \right), \left(\frac{B_T}{B_B}\right) \rightarrow \left(\frac{B_0}{B_1}\right)$ where L is $h \times h$ R best h rows
	where L_{11} is $b \times b$, B_1 has b rows
6	$\left(\frac{B_0}{B_1}\atop B_2\right) = \left(\frac{\widehat{B_0}}{B_1}\atop \overline{L_{22}\widehat{B_2}}\right)$
8	
5b	$\left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \leftarrow \left(\frac{L_{00}}{L_{10}} \begin{vmatrix} L_{01} \\ L_{11} \end{vmatrix} \begin{vmatrix} L_{12} \\ L_{20} \end{vmatrix} \right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1} \right)$
7	
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$ \left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \land \neg (m(L_{BR}) < m(L)) $
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := TRMM_BLK_VAR1(L, B)$
1a	$B = \hat{B}$
4	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ 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) \rightarrow \left(\begin{array}{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 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(\frac{B_0}{B_1}\right) = \left(\frac{\widehat{B_0}}{B_1}\right) = \left(\frac{\widehat{B_0}}{L_{22}\widehat{B_2}}\right) $
8	
5b	$ \left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \leftarrow \left(\frac{L_{00}}{L_{10}} \begin{vmatrix} L_{01} \\ L_{11} \end{vmatrix} L_{12} \\ L_{20} \begin{vmatrix} L_{21} \\ L_{22} \end{vmatrix} \right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1} \\ B_2\right) $
7	$ \left(\frac{B_0}{B_1}\right) = \left(\frac{\widehat{B_0}}{L_{11}\widehat{B_1}}\right) \\ \frac{L_{11}\widehat{B_1}}{L_{21}\widehat{B_1} + L_{22}\widehat{B_2}} $
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	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := \text{TRMM_BLK_VAR1}(L, B)$
1a	$B = \widehat{B}$
4	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ 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} \\ L_{BL} & L_{BR} \end{array}\right) \rightarrow \left(\begin{array}{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 \\ \overline{B_B} \end{array}\right) \rightarrow \left(\begin{array}{c c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) $ where L_{11} is $b \times b$, B_1 has b rows
	$\begin{pmatrix} B_0 \end{pmatrix} \begin{pmatrix} \widehat{B_0} \end{pmatrix}$
6	$ \left(\frac{B_0}{B_1}\right) = \left(\frac{\widehat{B_0}}{B_1}\right) = \left(\frac{\widehat{B_0}}{L_{22}\widehat{B_2}}\right) $
8	
5b	$\left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \leftarrow \left(\frac{L_{00}}{L_{11}} \begin{vmatrix} L_{01} \\ L_{10} \end{vmatrix} , \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1} \right) \leftarrow \left(\frac{B_0}{B_1}\right)$
7	$ \left(\frac{B_0}{B_1}\right) = \left(\frac{\widehat{B_0}}{L_{11}\widehat{B_1}}\right) \\ \frac{L_{11}\widehat{B_1}}{L_{21}\widehat{B_1} + L_{22}\widehat{B_2}} $
2	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right)$
	endwhile
2,3	$\left(\frac{B_T}{B_B}\right) = \left(\frac{\widehat{B}_T}{\widehat{B}_B}\right) \land \neg (m(L_{BR}) < m(L))$
1b	$[B] = \operatorname{trmm}(L, \widehat{B})$

Step	Algorithm: $[B] := TRMM_BLK_VAR1(L, B)$
	$L \to \left(\frac{L_{TL}}{L_{BL}} L_{BR}\right), B \to \left(\frac{B_T}{B_B}\right)$ 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} \\ L_{BL} & L_{BR} \end{array}\right) \rightarrow \left(\begin{array}{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 c} B_0 \\ \hline B_1 \\ \hline B_2 \end{array}\right) $ where L_{11} is $b \times b$, B_1 has b rows
	$ \left(\frac{L_{TL}}{L_{BL}} \begin{vmatrix} L_{TR} \\ L_{BL} \end{vmatrix} \leftarrow \left(\frac{L_{00}}{L_{10}} \begin{vmatrix} L_{01} \\ L_{10} \end{vmatrix} , \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1} \right) \leftarrow \left(\frac{B_0}{B_1}\right) + \left(\frac{B_0}{B_2}\right) + \left(\frac{B_0}{B_2}\right$
	endwhile

 $\textbf{Algorithm:} \ [B] := \texttt{TRMM_BLK_VAR1}(L,B)$

$$L
ightarrow \left(rac{L_{TL}}{L_{BL}} \left| L_{TR} \right| \right), \ B
ightarrow \left(rac{B_T}{B_B} \right)$$

where L_{BR} is 0×0 , B_B has 0 rows

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

Determine block size b

$$\left(\frac{L_{TL} \mid L_{TR}}{L_{BL} \mid L_{BR}}\right) \to \left(\frac{L_{00} \mid L_{01} \mid L_{02}}{L_{10} \mid L_{11} \mid L_{12}}\right), \left(\frac{B_T}{B_B}\right) \to \left(\frac{B_0}{B_1}\right)$$

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

$$B_2 := L_{21}B_1 + B_2B_1 := L_{11}B_1$$

$$\left(\frac{L_{TL} \mid L_{TR}}{L_{BL} \mid L_{BR}}\right) \leftarrow \left(\frac{L_{00} \mid L_{01} \mid L_{02}}{L_{10} \mid L_{11} \mid L_{12}}\right), \left(\frac{B_T}{B_B}\right) \leftarrow \left(\frac{B_0}{B_1}\right) \\
\frac{1}{B_2} = \frac{1}{B_2} \left(\frac{B_1}{B_2}\right) + \frac{1}{B_2} \left(\frac{B_1}$$

endwhile