
Algorithm 1 mptm(IN: $c_1, c_2, c_3, c_4, c_5, c_6, c_0, f, \omega, e$; OUT: u)

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1:  $i \leftarrow 0$ ;  $j \leftarrow 0$ ;  $k \leftarrow 0$ ;  $it \leftarrow 0$ 
2:  $\tau \leftarrow 2 \cdot \omega$ 
3: for  $m_0 \in [0; n-1]$  do
4:    $r[m_0] \leftarrow 0$ 
5: repeat
6:    $Aw \leftarrow 0$ ;  $RwRw \leftarrow 0$ ;  $ww \leftarrow 0$ ;  $max \leftarrow 0$ 
7:   for  $k \in [1; n_3-1]$  do
8:     for  $i \in [1; n_1-1]$  do
9:       for  $j \in [1; n_2-1]$  do
10:         $m_0 \leftarrow k + n_3 \cdot j + n_2 \cdot n_3 \cdot i$ 
11:        if  $c_0[m_0] > 0$  then
12:           $m_1 \leftarrow m_0 + n_2 \cdot n_3$ ;  $m_2 \leftarrow m_0 - n_2 \cdot n_3$ ;  $m_3 \leftarrow m_0 + n_3$ 
13:           $m_4 \leftarrow m_0 - n_3$ ;  $m_5 \leftarrow m_0 + 1$ ;  $m_6 \leftarrow m_0 - 1$ 
14:           $r[m_0] \leftarrow f[m_0] - c_0[m_0] \cdot u[m_0] + (c_1[m_0] \cdot u[m_1] + c_2[m_0] \cdot u[m_2] + c_3[m_0] \cdot u[m_3] + c_4[m_0] \cdot u[m_4] +$ 
15:             $c_5[m_0] \cdot u[m_5] + c_6[m_0] \cdot u[m_6])$ 
16:          if  $max < |r[m_0]|$  then
17:             $max \leftarrow |r[m_0]|$ 
18:          for  $k \in [1; n_3-1]$  do
19:            for  $i \in [1; n_1-1]$  do
20:              for  $j \in [1; n_2-1]$  do
21:                 $m_0 \leftarrow k + n_3 \cdot j + n_2 \cdot n_3 \cdot i$ 
22:                if  $c_0[m_0] > 0$  then
23:                   $m_2 \leftarrow m_0 - n_2 \cdot n_3$ ;  $m_4 \leftarrow m_0 - n_3$ ;  $m_6 \leftarrow m_0 - 1$ 
24:                   $r[m_0] \leftarrow (\omega \cdot (c_2[m_0] \cdot r[m_2] + c_4[m_0] \cdot r[m_4] + c_6[m_0] \cdot r[m_6]) + r[m_0]) / ((0.5 \cdot \omega + 1) \cdot c_0[m_0])$ 
25:          for  $k \in [n_3-2; 1]$  do
26:            for  $i \in [n_1-2; 1]$  do
27:              for  $j \in [n_2-2; 1]$  do
28:                 $m_0 \leftarrow k + n_3 \cdot j + n_2 \cdot n_3 \cdot i$ 
29:                if  $c_0[m_0] > 0$  then
30:                   $m_1 \leftarrow m_0 + n_2 \cdot n_3$ ;  $m_3 \leftarrow m_0 + n_3$ ;  $m_5 \leftarrow m_0 + 1$ 
31:                   $r[m_0] \leftarrow (\omega \cdot (c_1[m_0] \cdot r[m_1] + c_3[m_0] \cdot r[m_3] + c_5[m_0] \cdot r[m_5]) + r[m_0] \cdot c_0[m_0]) / ((0.5 \cdot \omega +$ 
32:                     $1) \cdot c_0[m_0])$ 
33:          for  $k \in [1; n_3-2]$  do
34:            for  $i \in [1; n_1-2]$  do
35:              for  $j \in [1; n_2-2]$  do
36:                 $m_0 \leftarrow k + n_3 \cdot j + n_2 \cdot n_3 \cdot i$ 
37:                if  $c_0[m_0] > 0$  then
38:                   $m_1 \leftarrow m_0 + n_2 \cdot n_3$ ;  $m_2 \leftarrow m_0 - n_2 \cdot n_3$ ;  $m_3 \leftarrow m_0 + n_3$ 
39:                   $m_4 \leftarrow m_0 - n_3$ ;  $m_5 \leftarrow m_0 + 1$ ;  $m_6 \leftarrow m_0 - 1$ 
40:                   $Aw \leftarrow 1.1 \cdot c_0[m_0] \cdot r[m_0] - (c_1[m_0] \cdot r[m_1] + c_3[m_0] \cdot r[m_3] + c_5[m_0] \cdot r[m_5] + c_2[m_0] \cdot r[m_2] + c_4[m_0] \cdot$ 
41:                     $r[m_4] + c_6[m_0] \cdot r[m_6])$ 
42:                   $Rr \leftarrow 0.5 \cdot c_0[m_0] \cdot r[m_0] - (c_1[m_0] \cdot r[m_1] + c_3[m_0] \cdot r[m_3] + c_5[m_0] \cdot r[m_5])$ 
43:                   $RwRw \leftarrow RwRw + Rr^2 / c_0[m_0]$ ;  $Aw \leftarrow Aw + Aw \cdot r[m_0]$ ;  $ww \leftarrow ww + c_0[m_0] \cdot r[m_0]^2$ 
44:          if  $ww > 0$  then
45:             $\tau \leftarrow 2 \cdot \omega + ww / Aw$ 
46:             $\omega \leftarrow \sqrt{ww / RwRw}$ 
47:          for  $m_0 \in [0; n]$  do
48:             $u[m_0] \leftarrow u[m_0] + 1 \cdot \tau \cdot r[m_0]$ 
49: until  $(max > e) \wedge (it < 300)$ 

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