## Encoding $6 \times 3$ baselevel using Morton codes and bit flips

		= 00001-0-0312	2 = 00100 - 0 - 060 = 00100 - 0 - 060	16
00000-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1	D= 00001-0- <b>10</b>	= 00001-0 <del>1</del>	두 00100-0-36 = 00100-야기	01-1-1
0000	0000 =	= 0010	= 0010	= 001
$\  \  (00000 \to (00_2, 000_2) \to (0, 0) $	00001 →(00 <sub>2</sub> ,0	01 <sub>2</sub> ) → (0, 1) 	$     \begin{array}{c}         & 0 \\         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\         & 0     \end{array}     $ $     \begin{array}{c}         & 0 \\     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}         & 0 \\     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $    \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     \end{array}     $ $     \begin{array}{c}     \end{array}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \begin{array}{c}     \end{array}     $ $     \end{array}$ $     \begin{array}{c}     \end{array}     $ $     \end{array}$ $     \begin{array}{c}     \end{array}     $ $     \end{array}$	-4  -46
00000-1-04	0001-1	0100-1	100-1	101-1
15   = 00010 - 0.00 = 00010 - 0.00	00011-0- <b>26</b>	°    '	8 	)  = 00
1-01000 1-01000 1-01000 1-01000 1-01000	5 = 00011-0- <b>20</b>	= 00011-0	00110-0- <b>50</b> = 00110-0-1	1
00001	0001	0011	00110	0011
	00011 →(01 <sub>2</sub> ,0	01 <sub>2</sub> ) → (1, ‡)	$00110 \to (01_2, 010_2) \to (1, \frac{1}{2})$	62 =
00010-1-22 00010-1-22 00011-1-038	11-1-	.10-1-	10-1-	11-1
. II .	000 	01001	00 01100 0 00 - 01100 00	= 001
#= 01000-0-66 = 01000-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0	01001-0-06		= 01100 - 0.90 = 01100 - 0.90 $ = 01100 - 0.90 = 01100 - 0.90$	
01000-1- 01000-0- <b>1</b> 000-0-1- 01001-1-1-1-1-1-1-1-1-1-1-1-1-1	1001	01100	)1100	1101
and the second s	$0 \\ 0 \\ 1001 \rightarrow (10_2, 0)$	$01_2$ ) $\rightarrow$ $(2, \frac{1}{4})$	$\begin{array}{c}   \\   \\   \\   \\   \\   \\   \\   \\   \\   $	
$010000 \rightarrow (10^{5}, 000^{5}) \rightarrow (2, 0$	1-1- <u>F</u>	100-110	00-111	01-11
0100	0100	= 011(	= 0110	= 011(
$\begin{bmatrix} 4 \\ 2 \end{bmatrix} = 01010 - 0 - 80 = 01010 - 0 = 0 \\ 2 \end{bmatrix} = 01010 - 0 - 80 = 01010 - 0 = 0 $	<u> </u>		<u> </u>	ᄩ
"ale = 0.10.10-0-189 = 0.10.10-0.4.	IN = 0.10.11-0-20.	= 01011-0 <b>::111</b>	#1= 01110-01 <b>16</b> = 01110-#1	IЩ
- 'A' <b>11</b> ' A'	01011-0- <b>300</b>	110-011 110-01110	#= 01110-01 <b>16</b> = 01110-# 	1111-11
- 01010 - 01010 - 01010 - 01010 - 01011	01011-1	= 01110-	= 01110-	5 = 01111 - 11
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	01011-1	.01 <sub>2</sub> ) → (3, 12)	$\begin{array}{c} -0 \\ -0 \\ 1 \\ -0 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ 1 \\ $	1-1126 = 01111-11
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	01011-1	= 01110-	= 01110-	01111-1126 = 01111-11
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	01011 → (11 <sub>2</sub> , 0 01011 → (11 <sub>2</sub> , 0 01011 → (11 <sub>2</sub> , 0 01011 → (11 <sub>2</sub> , 0	01 <sub>2</sub> ) → (3, 13) 011-01110 = 100001	-01110 = 100100 - 208 90 = 100100 - 1001000 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 10010	34 = 01111 - 1126 = 01111 - 11
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	01011 → (11 <sub>2</sub> , 0	01 <sub>2</sub> ) → (3, 13) 011-01110 = 100001	-01110 = 100100 - 208 90 = 100100 - 1001000 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 1001000 - 100100 - 100100 - 100100 - 100100 - 100100 - 100100 - 10010	101 + 3 = 0111 - 112 = 011111 - 112 = 011111 - 112 = 011111 - 112 = 011111 - 112 = 0111111 - 112 = 011111 - 111 = 011111 - 11111 - 11111 - 11111 - 11111 -
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	1011 → (11 <sub>2</sub> , 0   1011 → (11 <sub>2</sub> , 0   1-1   100001-2660   100001-2660	= 100001 = 100001 = 100001	-01110 = 31110 → (112,0102) → (3,3) = 100100 20890 = 100100 20910 = 100100 100100 100100 100100 100100 100100	= 100101 + 70 = 01111 - 1126 = 01111 - 1126
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	1011 → (11 <sub>2</sub> , 0   1011 → (11 <sub>2</sub> , 0   100001-20600   100001-20600   100001 → (00 <sub>2</sub> , 0	= 100001 = 100001 = 100001	$\begin{array}{c} -011110 & = & & & & & & & & & & \\ -011110 & = & & & & & & & \\ -011110 & = & & & & & & \\ -01111 & = & & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & \\ -$	
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	1011 → (11 <sub>2</sub> , 0   1011 → (11 <sub>2</sub> , 0   100001-20600   100001-20600   100001 → (00 <sub>2</sub> , 0	= 100001 = 100001 = 100001	$\begin{array}{c} -011110 & = & & & & & & & & & & \\ -011110 & = & & & & & & & \\ -011110 & = & & & & & & \\ -01111 & = & & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & & \\ -01111 & = & \\ -$	
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	1011 → (11 <sub>2</sub> , 0   1011 → (11 <sub>2</sub> , 0   1-1   100001-2660   100001-2660	-01110 = 100001 = 1000001 = 1000001 = 1000001 = 1000001 = 1000001 = 1000001 = 10000	-01110 = 31110 → (112,0102) → (3,3) = 100100 20890 = 100100 20910 = 100100 100100 100100 100100 100100 100100	
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)		$01_{2}) \rightarrow (3, 011 - 01110)$ $= 100001 001$ $= 100001 001$ $= 100011 001$ $= 100011 001$	-01110 = 21110 - (112,0102) - (3,011-1110) = 211110 - (112,0102) - (10010001 - (1001001	11 3030- 100101 3021-
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)		$\begin{array}{c} 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (4,\frac{1}{20}62.001001) \\ 0.01_$	-01110 = 2011-1110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2	11 到
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)		$\begin{array}{c} 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (4,\frac{1}{20}62.001001) \\ 0.01_$	-01110 = 2011-1110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2	- 100111 40 100101 30 1 = 1
-01010 = #1010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0) -101010 → (11 <sub>2</sub> , 000 <sub>2</sub> ) → (3, 0)	100001 20660   100001 20660   100001 20660   100001 20600   100001 20600	$\begin{array}{c} 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (3,\frac{1}{20}) \\ 0.01_{2}) \rightarrow (4,\frac{1}{20}62.001001) \\ 0.01_$	-01110 = 2011-1110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-11110 = 2011-1110 = 2	81= 1001111 40 80 100101 30 21 = 1
-01010 = 101010 = 101010 = 101010 = 10101010	00001 → (112, 0 01011	$\begin{array}{c} 0.01_{2}) \rightarrow (3,011.01110) = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.0011.0011001 = 3.001100101 = 3.0011001 = 3.0011001 = 3.0011001 = 3.0011001 = 3.0011001 = 3.0011001 = 3.0011001 = 3$	-01110 = 2011-1110 = 2010-1001	二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十

 $101000 \rightarrow (10_2, 000_2) \rightarrow (6, 0) \\ 101001 \rightarrow (10_2, 001_2) \rightarrow (6, 1) \\ 101100 \rightarrow (10_2, 010_2) \rightarrow (6, 2)$