## Encoding 5 × 5 baselevel using Morton codes and bit flips

$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} $		0 = 00000-0-00 1 = 00000-0-01	8	= 00001-0-00 9 = 00001-0-01	32	2 = 00100-0-0033 = 00100-0-01	14	0 = 00101-0-0041 = 00101-0-0	112	8 = 10000-0-01029 = 10000-0-0	)1 <b>=</b> 0	
00000 - (00, 000) - (0.0)   000	00-T-	유= 00000-0-10 3 = 00000-0-택	Ϊ́	= 00001-0-1011 = 00001-0	B≱  -	∮= 00100-0-1035 = 00100-0 <b>∢</b> 1	·	주 = 00101-0-1043 = 00101-0위 당	3	ਹੈ = 10000-0-1 <b>0</b> 31 = 10000-0ਜ਼ੀ ਨੂੰ	1-1-1	
00000 - (00, 000) - (0.0)   000	0000	0000	000	0100	0.100	0101	5	1000		000	1000	
The state of the	0	п П	1 = 0	$\begin{array}{c} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 &$		$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	<b>  </b>	$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	`i	 	2 = .	
	0 <u>1</u>    4	6 11 10 10 10 10 10 10 10 10 10 10 10 10	", <u>`</u>   -	00301 7(002,00012) 7(0,11)8[10-	<del> </del>	00100 7(002,0102) 7(0,2)4	;   ;	013	<u>-</u>	7,1002, 7(0,1,7,4,7,4,7,4,7,4,7,4,7,4,7,4,7,4,7,4,7	-   4    4	
	-T-0(	01-1	01-1	1-00		01-1	5	001-1		001-1	001-1	
	000	0000	000	0001	100	001	Š	001		100	= 100	
1	ے <b>ا</b>	$\frac{1}{6} = 00010 - 0 - 0017 = 00010 - 0 \frac{1}{6}$	2 <u>4</u>	$\frac{1}{1} = 00011 - 0 - 0025 = 00011 - 0 + 000000000000000000000000000$	14 <u>6</u>	ន = 00110-0-0049 = 00110-0 <sub>ម</sub> ្ព	   <u> </u>	6 = 00111-0-0057 = 00111-0	<sub>4</sub>	<u>a</u> = 10010-0-0 <b>1</b> 045 = 10010-0=0	43 =	
The color   The	00-T-	₩ = 00010-0-1019 = 00010-0	26	= 00011-0-1027 = 00011-0	ÌБ₹ -	= 00110-0-1051 = 00110-0	Î   5	= 00111-0-1059 = 00111-0-91	4	75 = 10010 - 0 - 10047 = 10010 - 0 - 10010	$\frac{1}{1}$	
The color   The		00100	011	0110	110	0111		0010		0011	0011	
The color   The	ĭ     ∩	00 = =	00 =	00				00 = 01	֓֞֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֓֡֡֓֓֓֡֓֓֡֓	= = = = = = = = = = = = = = = = = = = =	8 = 1	
	)     	$000010 \rightarrow (01_2, 000_2) \rightarrow (1, 0) \otimes $	    2 	$000011 \to (01_2, 001_2) \to (1, 1) \times (01_2, 001_2) \to (1, 1) \times (01_2, 001_2) \to ($	<u> </u>	$+00110 \rightarrow (01_2, 010_2) \rightarrow (1, 2)_0$	{    {	$\begin{array}{c} 1 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 1 \\ 0 \\ 1^{2}, 0 \\ 1 \\ 1^{2}) \rightarrow (1, 3) \\ 4 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0 \\ 0$	II 5	$\begin{array}{c} 2010010 \rightarrow (01_2, 100_2) \rightarrow (1, 4) \\ 0010 \rightarrow (01_2, 100_2) \rightarrow (1, 4) \\ 0010 \rightarrow (01_2, 100_2) \rightarrow (01_2, 100_2) \\ 0010 \rightarrow (01_2, 100_2) \rightarrow$	1158	
	)-T-0	.1-1-(	1-1-	0-1-(		1-1-0-		10-1-01		11-1-	11-1	
	000	0000	000	0011	100			100	5	100	100	
The control of the	= -	။ (နှံ = 01000-0-0065 = 01000-0 ၍1	7 <u>2</u>	$\frac{1}{100} = 01001-0-0073 = 01001-0\frac{10001}{1000}$	96	$\frac{1}{5} = 01100 - 0 - 0097 = 01100 - 0.091$	Ģ	   04 = 01101-0-0005 = 01101-020	9	॥ 2 = 11000-0-0 <b>0</b> 93 = 11000-0 <del>-</del> 0	29 =	
	700-I	6 = 01000-0-1067 = 01000-041	4	= 01001-0-1075 = 01001-0-91	Þξ	= 01100-0-1099 = 01100-0-91	Ç	75 = 01101-0-1007 = 01101-0-1	9	4 = 11000-0-1 <b>0</b> 95 = 11000-0-1	1-19	
	-  -	000	100	100-	000	101-	5	.101-		.000	.001	
	)	= 010	= 01	= 01	[	= 01		= 01 = 11			= 11	
	<u>ۃ</u> اا	$001000 \rightarrow (10_2, 000_2) \rightarrow (2, 0)$	   2   8	$01001 \rightarrow (10_2, 001_2) \rightarrow (2, 1)$	<u> </u>	$01100 \rightarrow (10_2, 010_2) \rightarrow (2, 2)$	{  -  -	$201101 \rightarrow (10_2, 011_2) \rightarrow (2, 3)\%$	e	$\begin{array}{c} 2 \\ 11000 \\ \rightarrow (10_2, 100_2) \\ \rightarrow (2, 4) \\ 2 \\ \end{array}$	<b>3</b> 06	
	0-I-(	)-1-1	-1-1	0-1-0		1-1-0	,	0-1-0		1-1-0	17.	
	) 100T	1000	100	0110	110	0110		0110		1100	1100	
	) = 0		   	 	יינד יינד	) 	2	 	J G	      <del> </del>		
The control of the	300 -		. ==					<del> </del>			Ā	
	T-0T		]	-01	ш			-1		<u>.</u>	II '.	
		010	010	= 011	-	= 011		= 011		110	= 11(	
$\begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} $	84    	ω	    #	$01011 \rightarrow (11_2, 001_2) \rightarrow (3, 1) \stackrel{"}{\subseteq}$	<u>-</u>	$01110 \rightarrow (11_2, 010_2) \rightarrow (3, 2) \frac{7}{2}$		$\overset{"}{\overset{"}{\overset{"}{\overset{"}{\overset{"}{\overset{"}{\overset{"}{\overset{"}$	ב <sub>ַ</sub>		<b>1</b> 22 =	
$ \begin{array}{cccccccccccccccccccccccccccccccccccc$	.I-0184 	11-11	-	-1-0]	-	-1-0]		-1-11	-	71-1-	1-12	
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$ \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c} \begin{array}{c}$	5   	II II	0]	0		0		O		H		
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	241 241	=======================================		=======================================	167		16		18 <u>/</u> 16/	Ψ = 110000-0-885 = 110000-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	9 <b>1</b> 6	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$	1-00000	`;'	01-10	0	5	7 - 100100-0- <b>79</b> 1 - 100100-01		0 円 - 100101-0- <b>78</b> 2 = 100101-位	1	, <u> </u>	01-1	
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		1000	1000	1001		1001	200	1001		1100	1100	
\$\frac{1}{1}\$\$\fra	пЩ	$\sim 100000 \rightarrow (00_2, 000_2) \rightarrow (4, 0)$	0	$   100001 \rightarrow (00_2, 001_2) \rightarrow (4, 1)_{N}$		$100100 \rightarrow (00_2, 010_2) \rightarrow (4, 2)$	<b> </b>	$\parallel$ $\simeq$ 100101 → (00 <sub>2</sub> , 011 <sub>2</sub> ) → (4, 3) $\approx$		$   0 > 110000 \rightarrow (00_2, 100_2) \rightarrow (4, 4) $	 	
	₽a-⊺- 	-1-26	-  -	1-29	֚֚֟֝֟֝֟֝֟֝֟֝֟֝֟֟֝֟֟֟֝֟	1-80	; ;	1-1-38	֚֚֚֓֞֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֟֝֡֡֝֟֝֟֝֡֝֡֡֝		::# 	
	   	0000	00	.0100-	1100	101-		1000		.1000	0001	
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274 = 100010 - 0.205 = 100010 - 0.202 = 100011 - 0.203 = 100011 - 0.203 = 100011 - 0.203 = 100011 - 0.203 = 100011 - 0.203 = 100011 - 0.203 = 100010 - 0.203	<u>"</u> 4	<u> </u>			2				100		ש ווי	

 $100010 \rightarrow (01_2, 000_2) \rightarrow (5, 0) \qquad 100011 \rightarrow (01_2, 001_2) \rightarrow (5, 1) \qquad 100110 \rightarrow (01_2, 010_2) \rightarrow (5, 2) \qquad 100111 \rightarrow (01_2, 011_2) \rightarrow (5, 3) \qquad 110010 \rightarrow (01_2, 100_2) \rightarrow (5, 4)$