

Example: (5, 2) linear code over $\mathbb{Z}_2$

$$G = \begin{pmatrix} 1 & 0 & 1 & 1 & 0 \\ 0 & 1 & 1 & 0 & 1 \end{pmatrix}, \quad H = \begin{pmatrix} 1 & 1 & 1 & 0 & 0 \\ 1 & 0 & 0 & 1 & 0 \\ 0 & 1 & 0 & 0 & 1 \end{pmatrix}$$

Code $C = \{00000, 10110, 01101, 11011\}$

Coset	Syndrome
$00000 + C = C$	000
$00001 + C = \{00001, 10111, 01100, 11010\}$	001
$00010 + C = \{00010, 10100, 01111, 11001\}$	010
$00011 + C = \{00011, 10101, 01110, 11000\}$	011
$00100 + C = \{00100, 10010, 01001, 11111\}$	100
$01000 + C = \{01000, 11110, 00101, 10011\}$	101
$10000 + C = \{10000, 00110, 11101, 01011\}$	110
$01010 + C = \{01010, 11100, 00111, 10001\}$	111

s	000	001	010	011	100	101	110	111
$\tilde{\mathbf{w}}(\mathbf{s})$	00000	00001	00010	00011	00100	01000	10000	01010
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