- The binary data stream is applied to duobinary filtering system $y_k = b_k - b_{k-2} = x_k \oplus b_{k-2} - b_{k-2}$.
- If $x_k = 0$ then $y_k = 0$ regardless of b_{k-2}; if $x_k = 1$, then $y_k = -1$ or 1.
- The decoding is

$$\tilde{x}_k = y_k \bmod -2 = \begin{cases} 0, & y_k = 0, 2 \\ 1, & y_k = 1 \end{cases}$$

the dependence of previous decoded values has been eliminated.

TABLE 9.3 Decoding of Precoded Modified Duobinary Signals

x_k	b_{k-2}	y_k	Y_k
1	0	1	A
1	1	−1	$-A$
0	0	0	0
0	1	0	0

- Both duobinary signaling and modified duobinary signaling are the cases of a wider selection of partial-response signaling methods. A general framework of using transversal filtering can be shown as