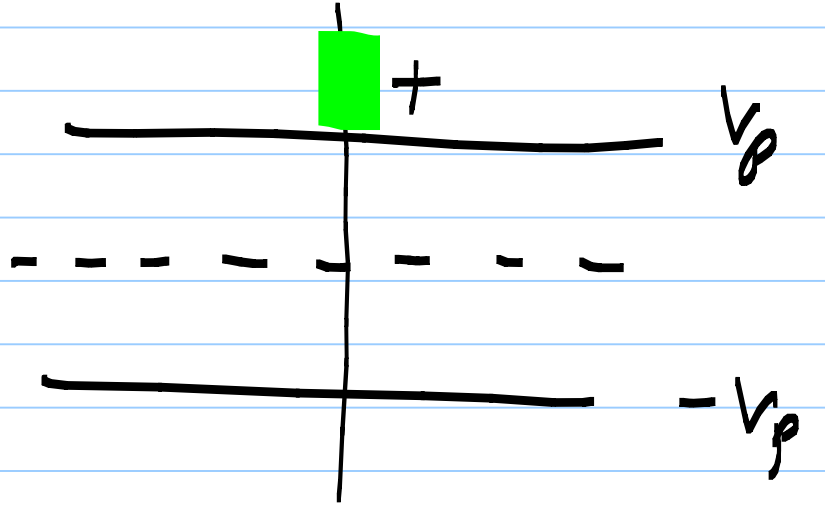
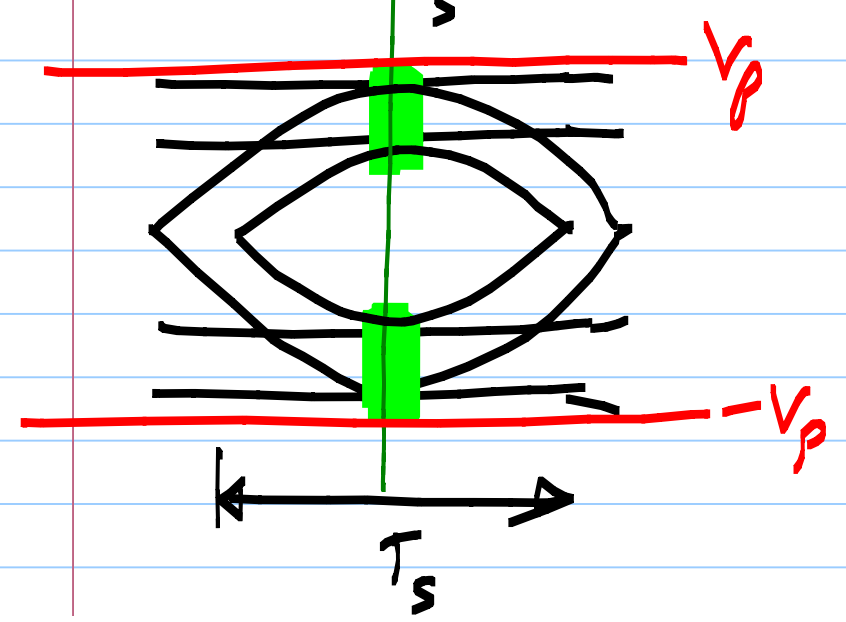
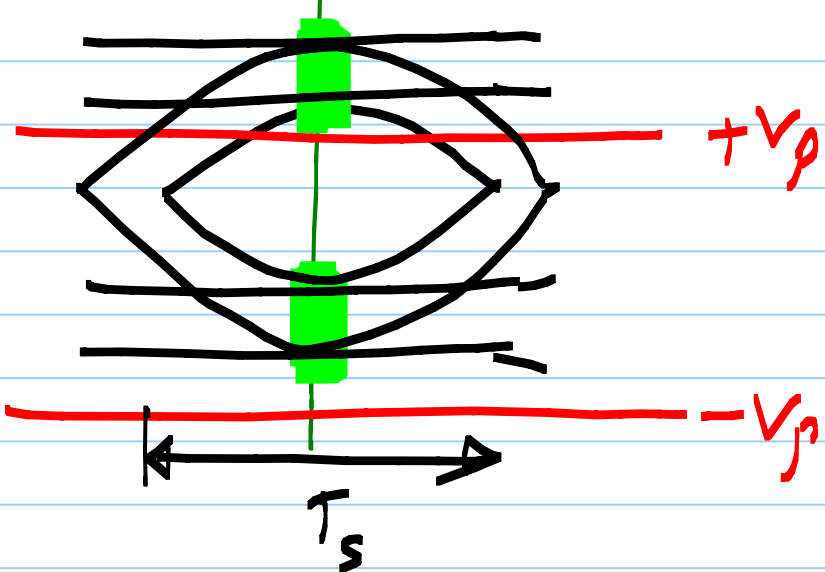
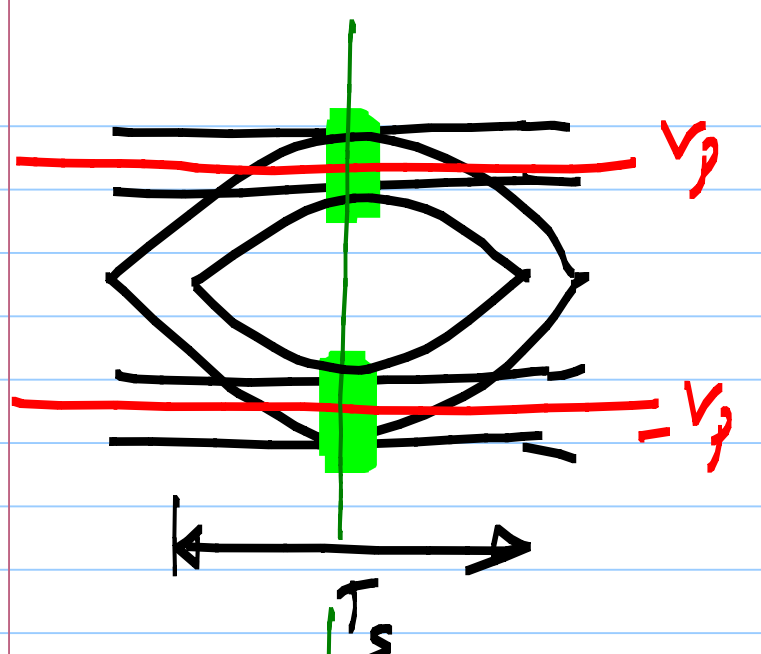


$\text{sgn}(x)$   
 $\downarrow$   
 $\text{sgn}(y)$

offset-



Channel impulse response

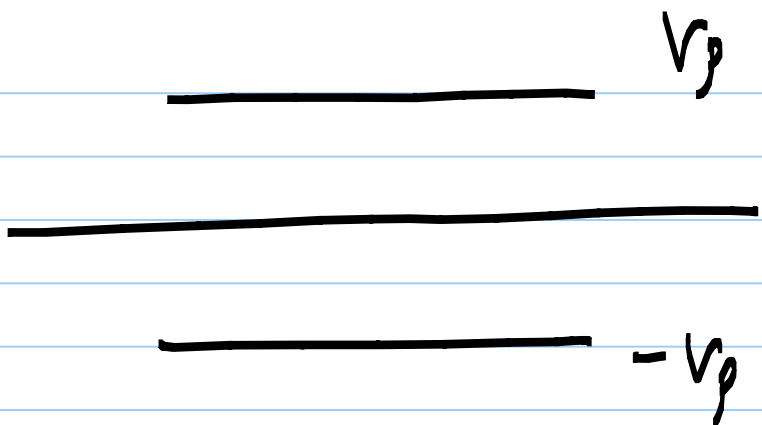
$$h_0 + \sum_{k=1}^{\infty} h_k z^{-k}$$

$z^{-1}$

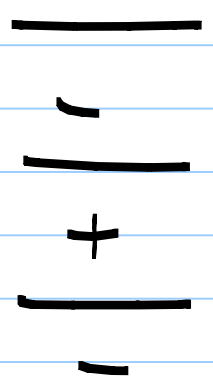


$$h_0 + \sum_{k=1}^{\infty} |h_k|$$
$$h_0 - \sum_{k=1}^{\infty} |h_k|$$

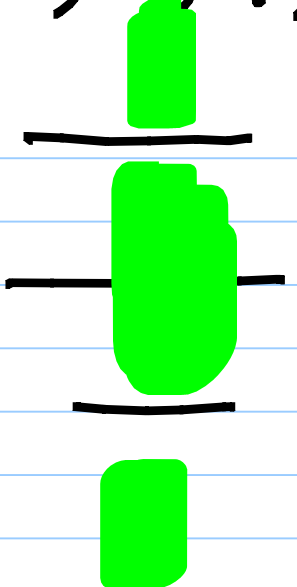
0



$\text{sgn}(e)$   
+

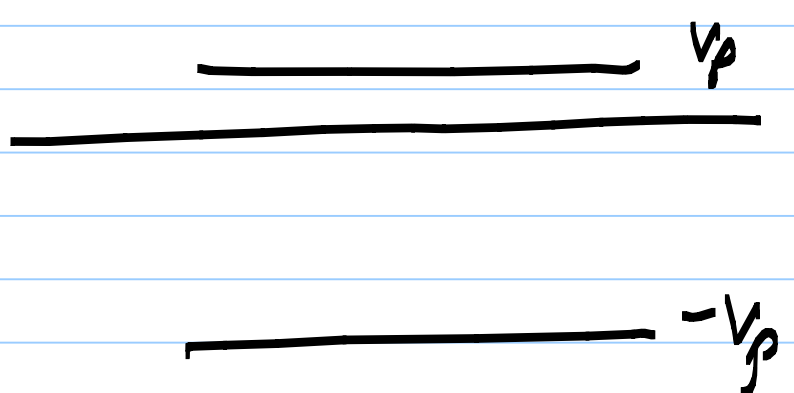


$\text{sgn}(y) \text{sgn}(e)$

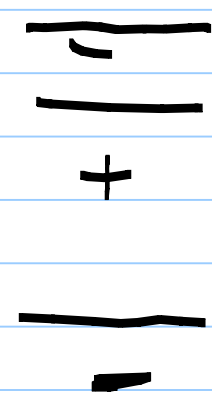


w/ offset

0



$\text{sgn}(e)$   
+



$\text{sgn}(y) \text{sgn}(e)$

$\text{sgn}(e)$   
+

$v_p$

0

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$-v_p$

+

$+2v_p$

\_\_\_\_\_

\_\_\_\_\_

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\_\_\_\_\_

\_\_\_\_\_

$-v_p$

0

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

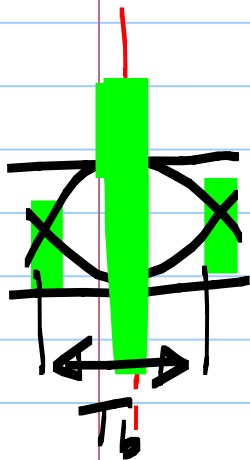
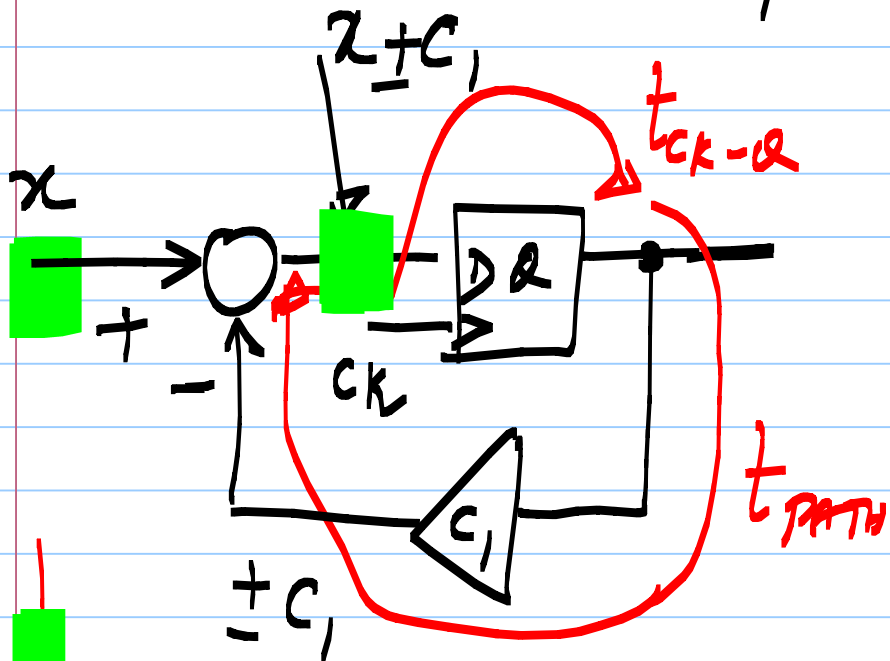
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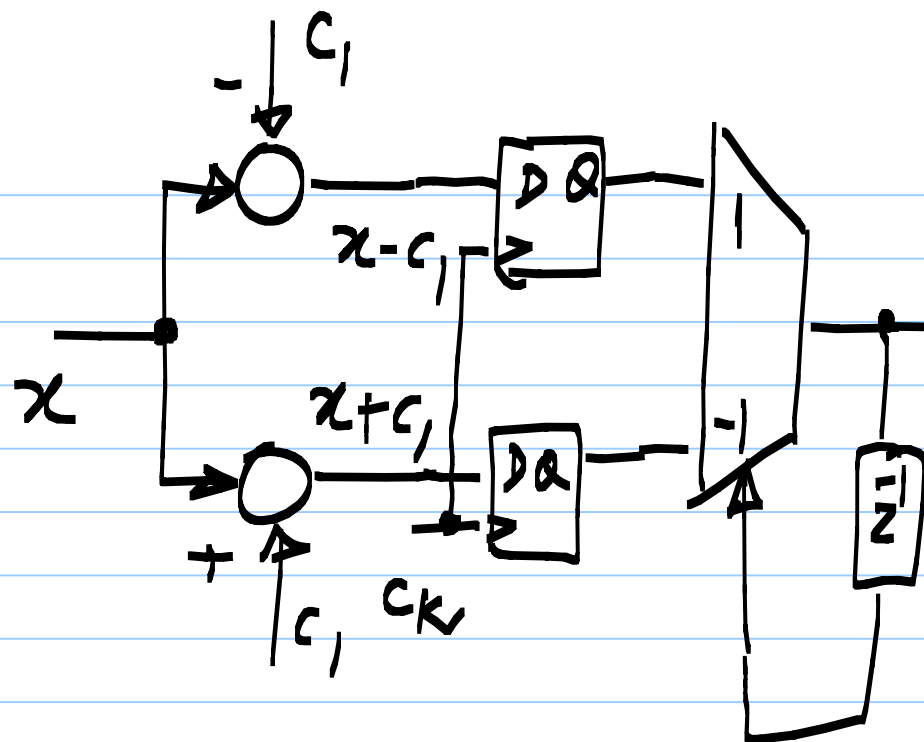


DFE: Feedback has

$t_w$  arrive within 1 cycle

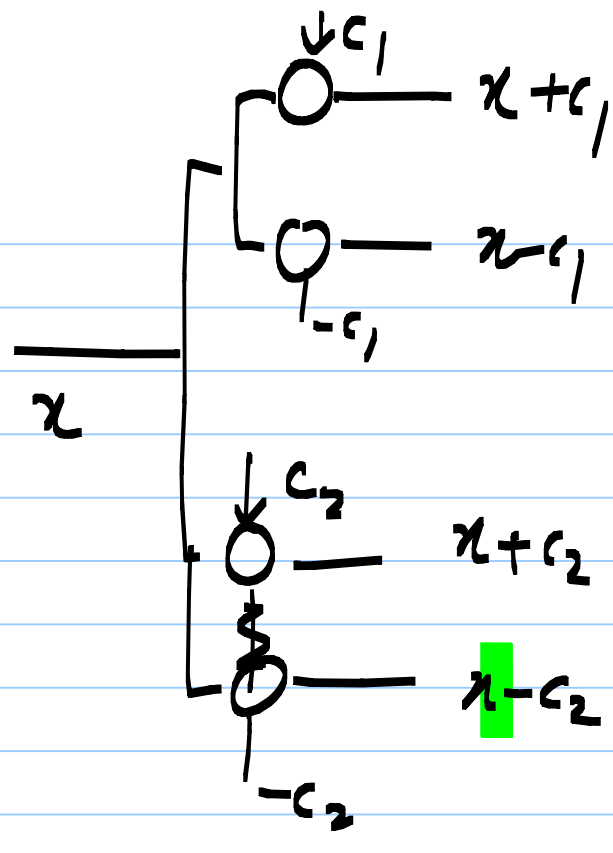
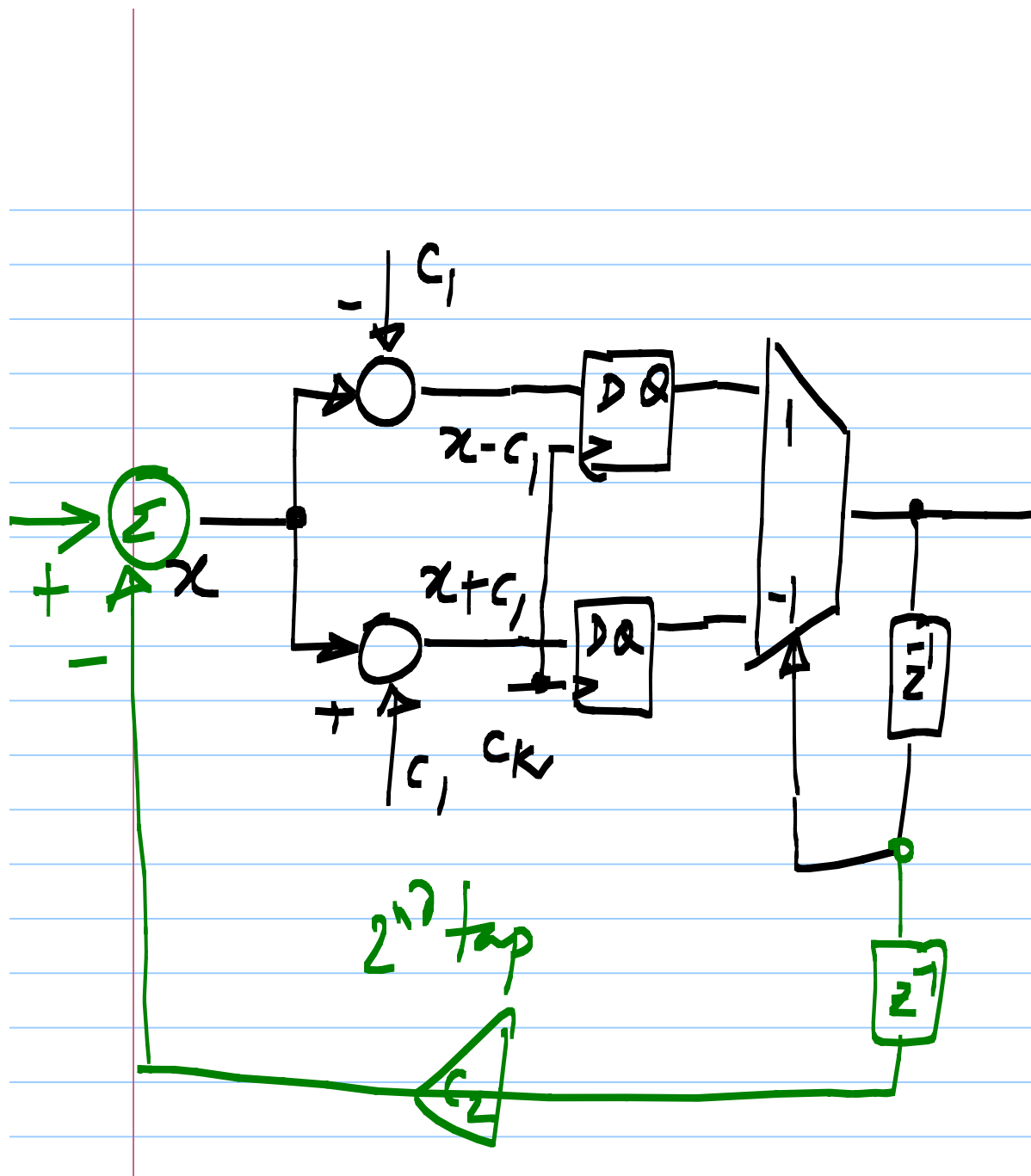


$t_{ck-\alpha} + t_{path} \sim 0.5T_s$



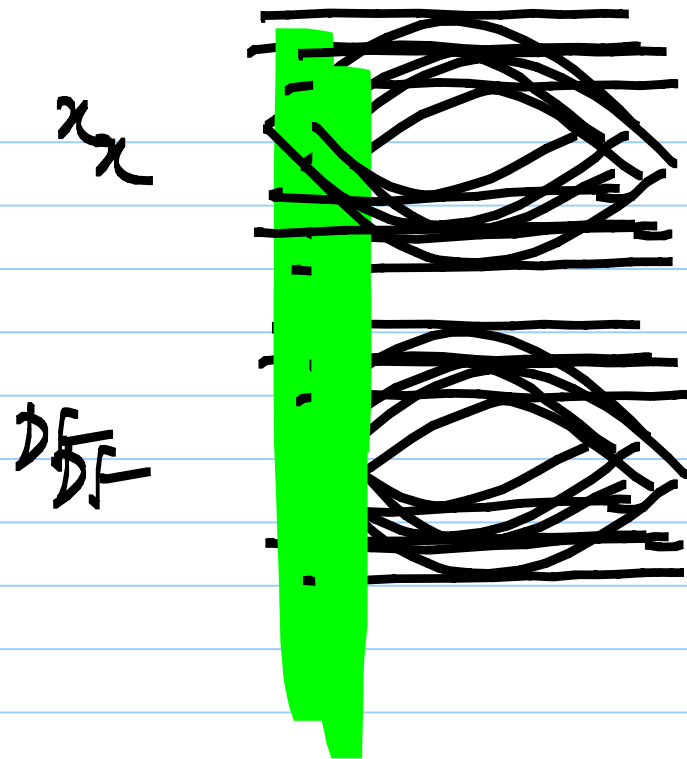
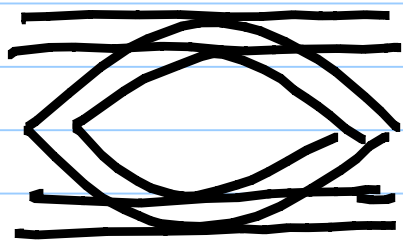
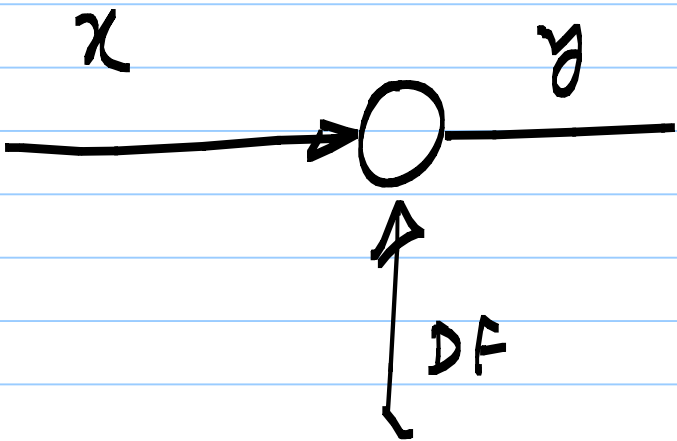
Speculative DFE

Summation, decision FF outside the fb loop



$$\lambda \pm c_1, \pm c_2$$

4 possibilities





$\alpha$

$\beta$

