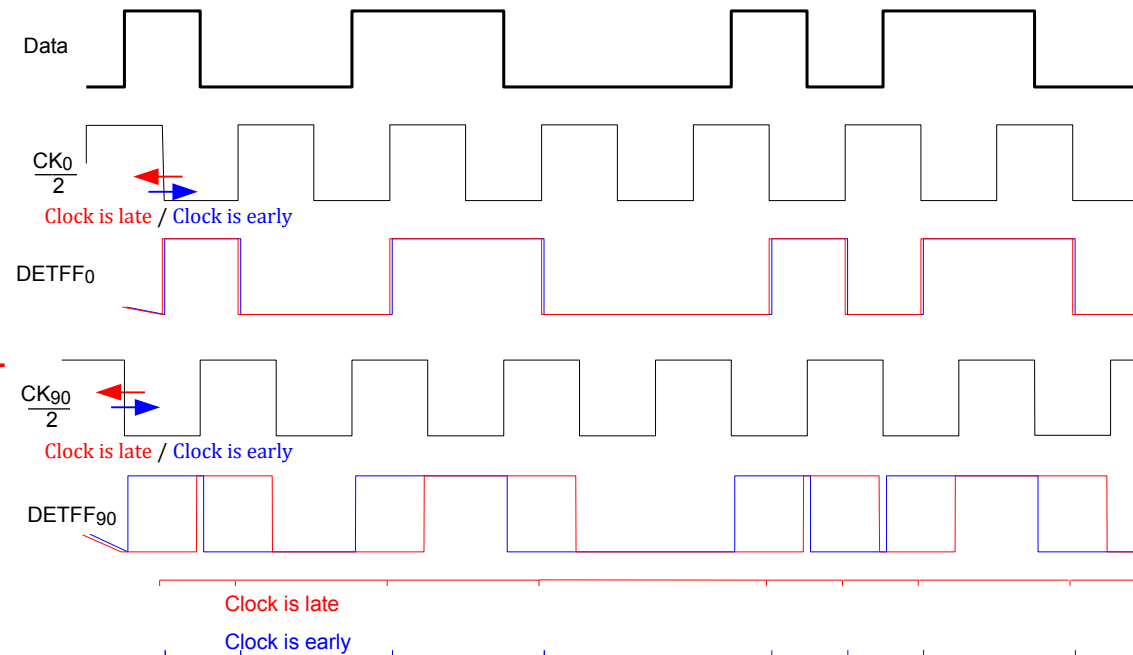
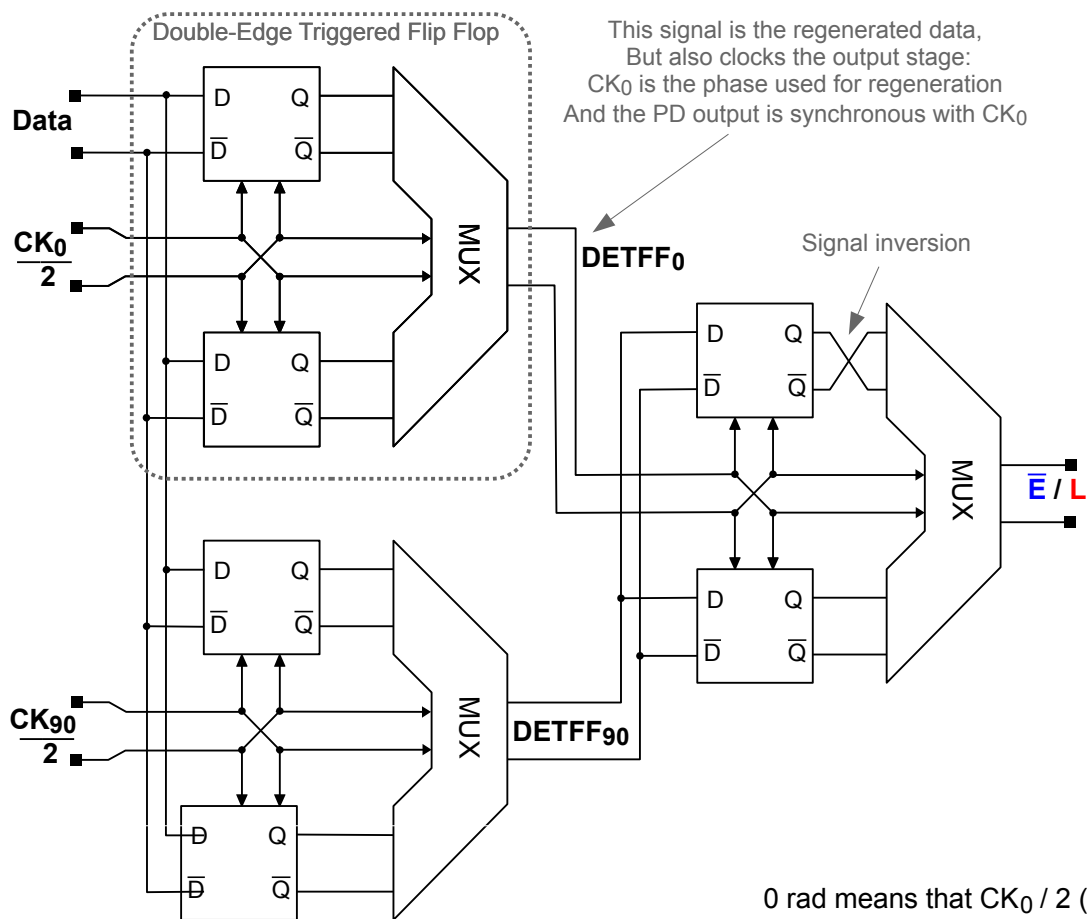


## Phase Detector using DETFFs and clocks I (lead) and Q (lag) at $f/2$

Example with the output held constant if a data transition is not found  
Waveforms correspond to a condition close to lock but without bang-bang



### Characteristic of the detector

0 rad means that  $CK_0/2$  (using both pos and neg trans.) samples the center of the data pulses

