

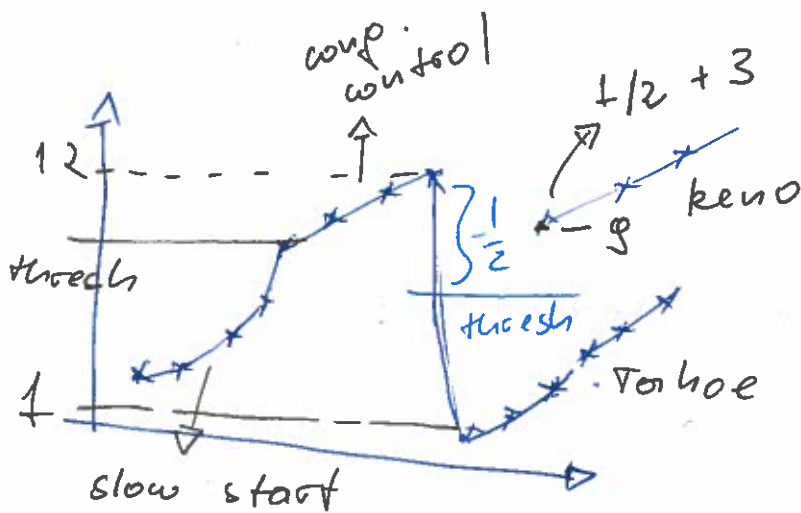
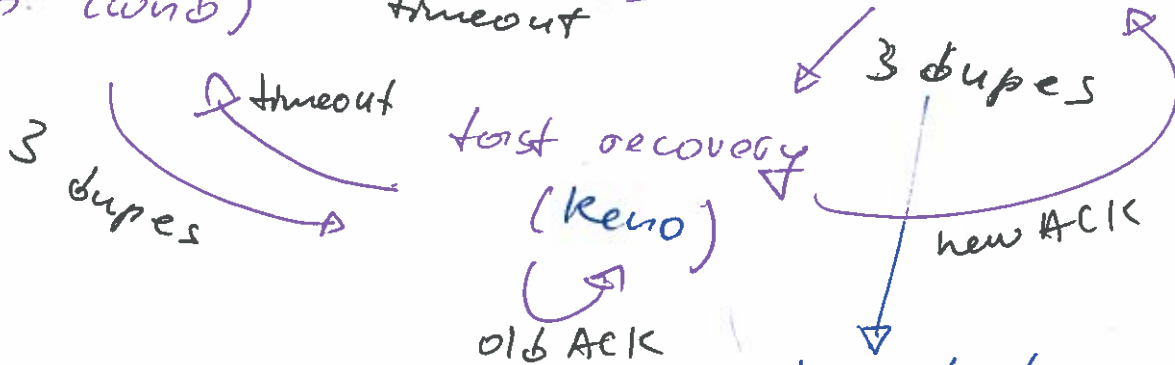
flow control - keep track of receiver's buf

$$RTT = (1 - \alpha) \times \text{Estimated} + \alpha \times \text{Sample RTT}$$

$$\text{Dev RTT} = (1 - \beta) \times \text{Dev RTT} + \beta \times |\text{Sample RTT} - \text{Estim RTT}|$$

$$\text{Timeout} = \text{Estimated RTT} + 4 \times \text{Dev RTT}$$

Slow start (exp. cwnd)  $\xrightarrow{\text{cwnd} \geq \text{ss thresh}}$  Cong. control / (cwnd  $\neq \frac{\text{MSS}}{\text{RTT}}$ )



Into fast  
 $\text{cwnd} = \text{ssthresh} + 3\text{MSS}$   
 $\downarrow$   
 $1 = 2$

$$\text{throughput} = \frac{3}{4} \frac{\text{W}}{\text{RTT}}$$

window size where loss occurs

