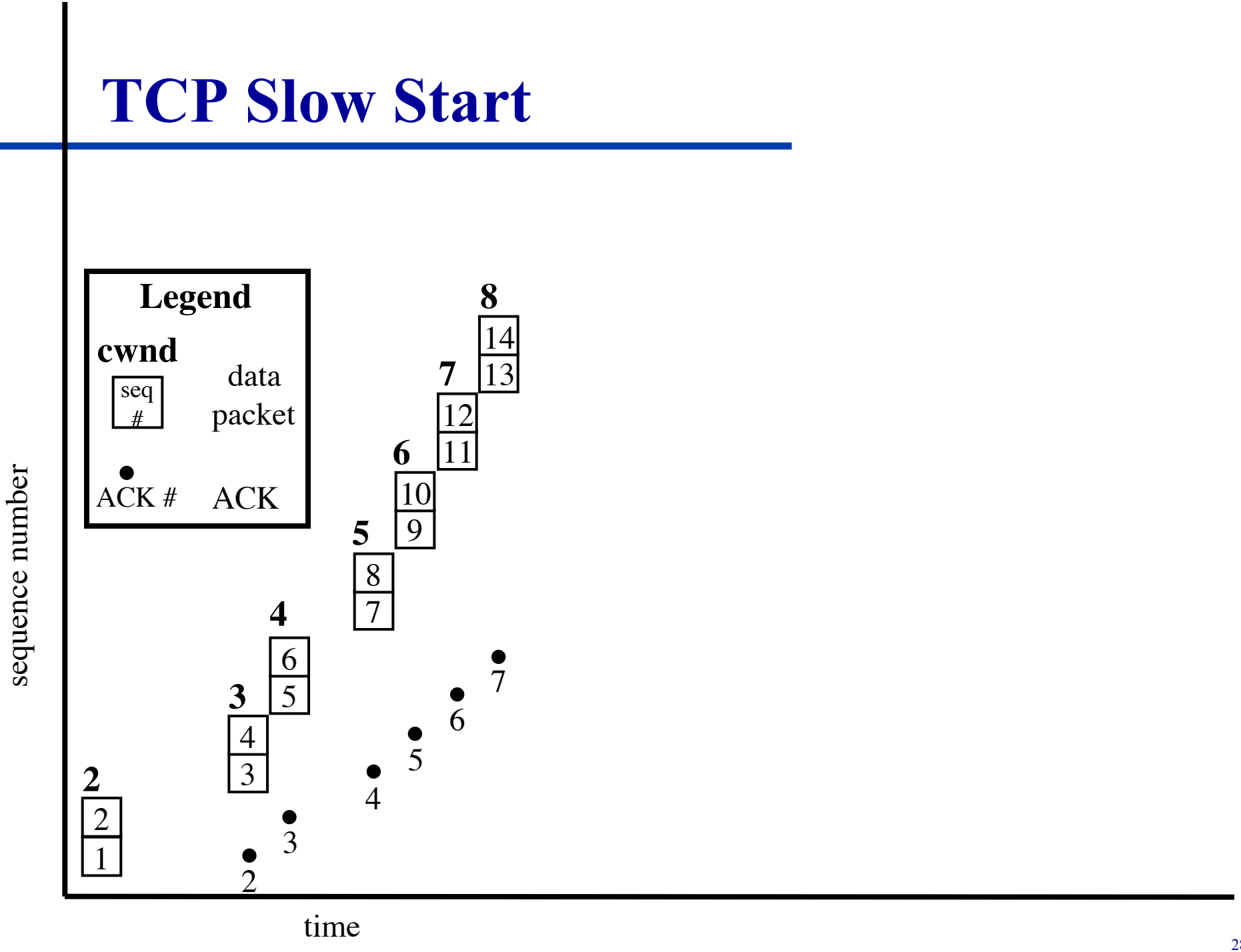
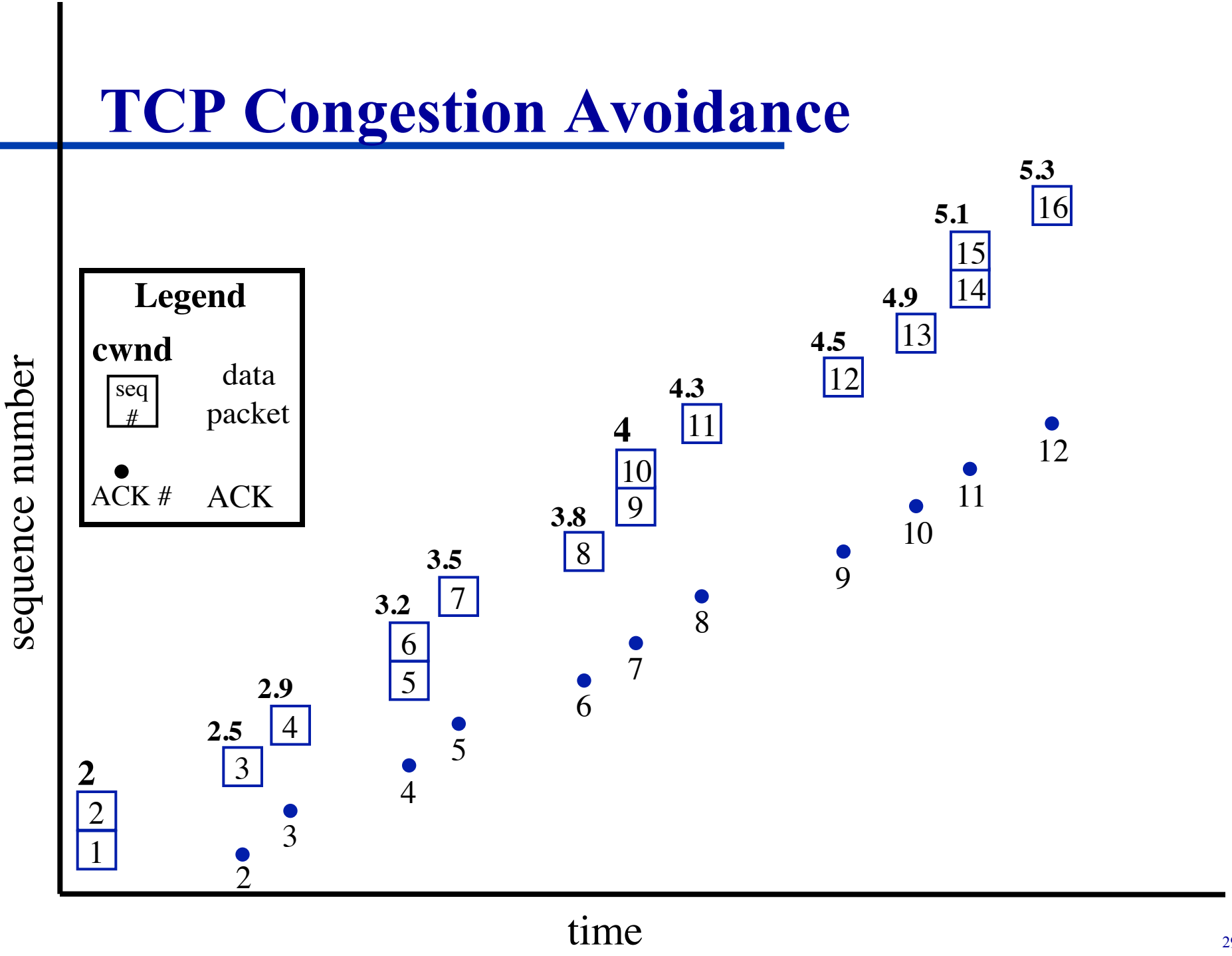
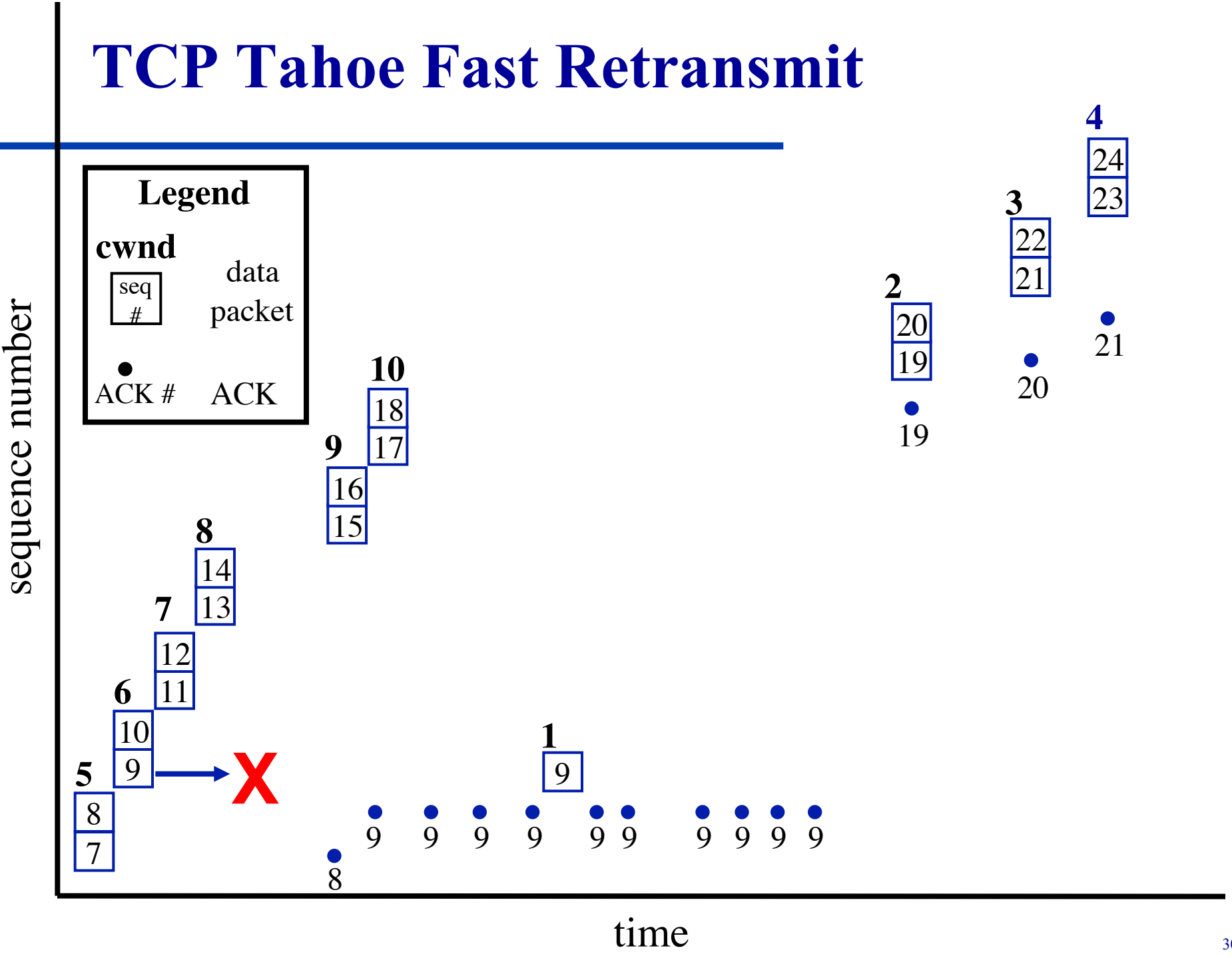
TCP Slow Start



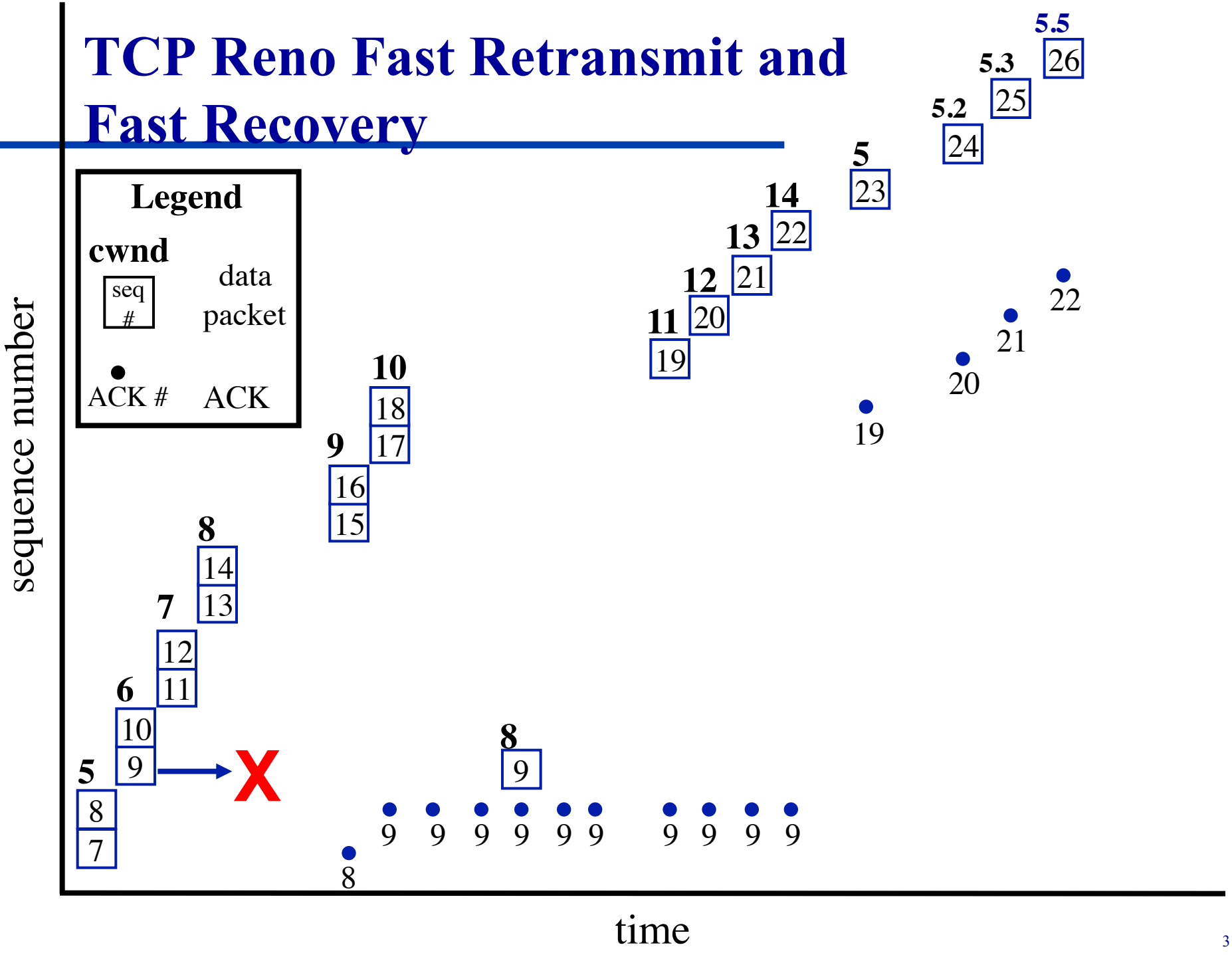
TCP Congestion Avoidance



TCP Tahoe Fast Retransmit



TCP Reno Fast Retransmit and Fast Recovery



Tahoe vs. Reno

One Lost Segment

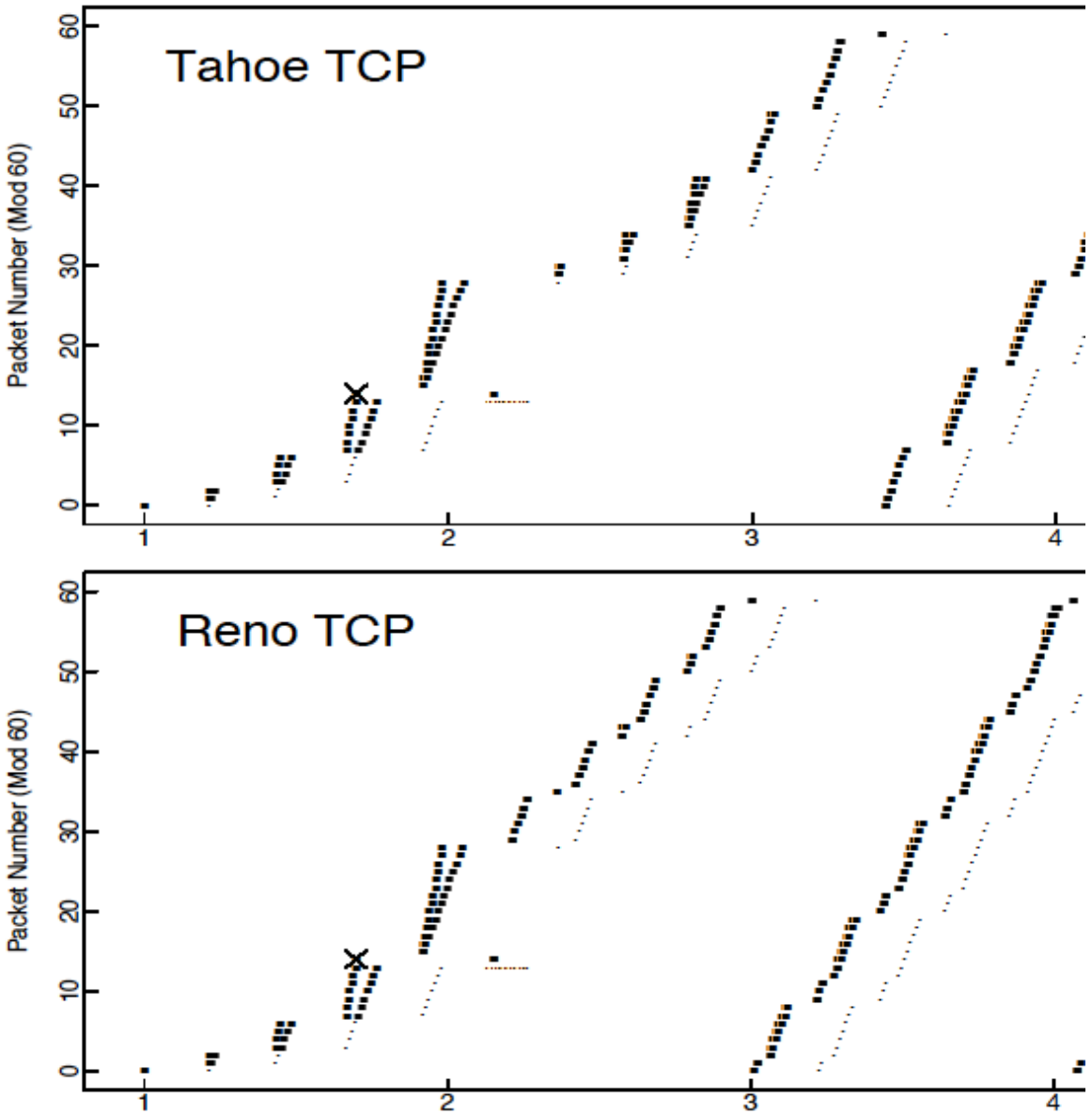


Figure 2 from "Simulation-based Comparison of Tahoe, Reno, and SACK TCP" by Fall and Floyd, SIGCOMM 1996.

Tahoe vs. Reno

Two Lost Segments

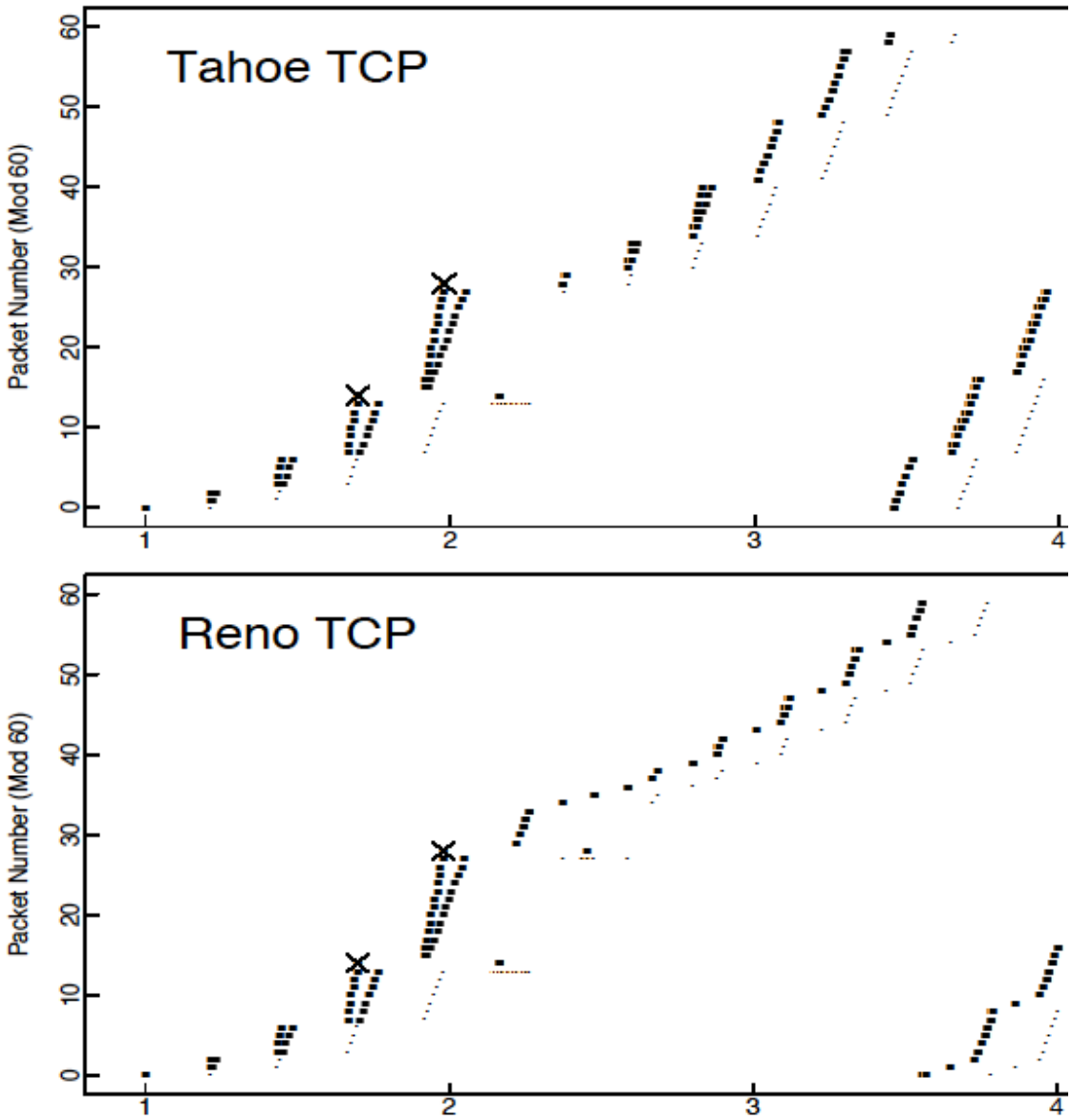


Figure 3 from "Simulation-based Comparison of Tahoe, Reno, and SACK TCP" by Fall and Floyd, SIGCOMM 1996.

Tahoe vs. Reno

Three Lost Segments

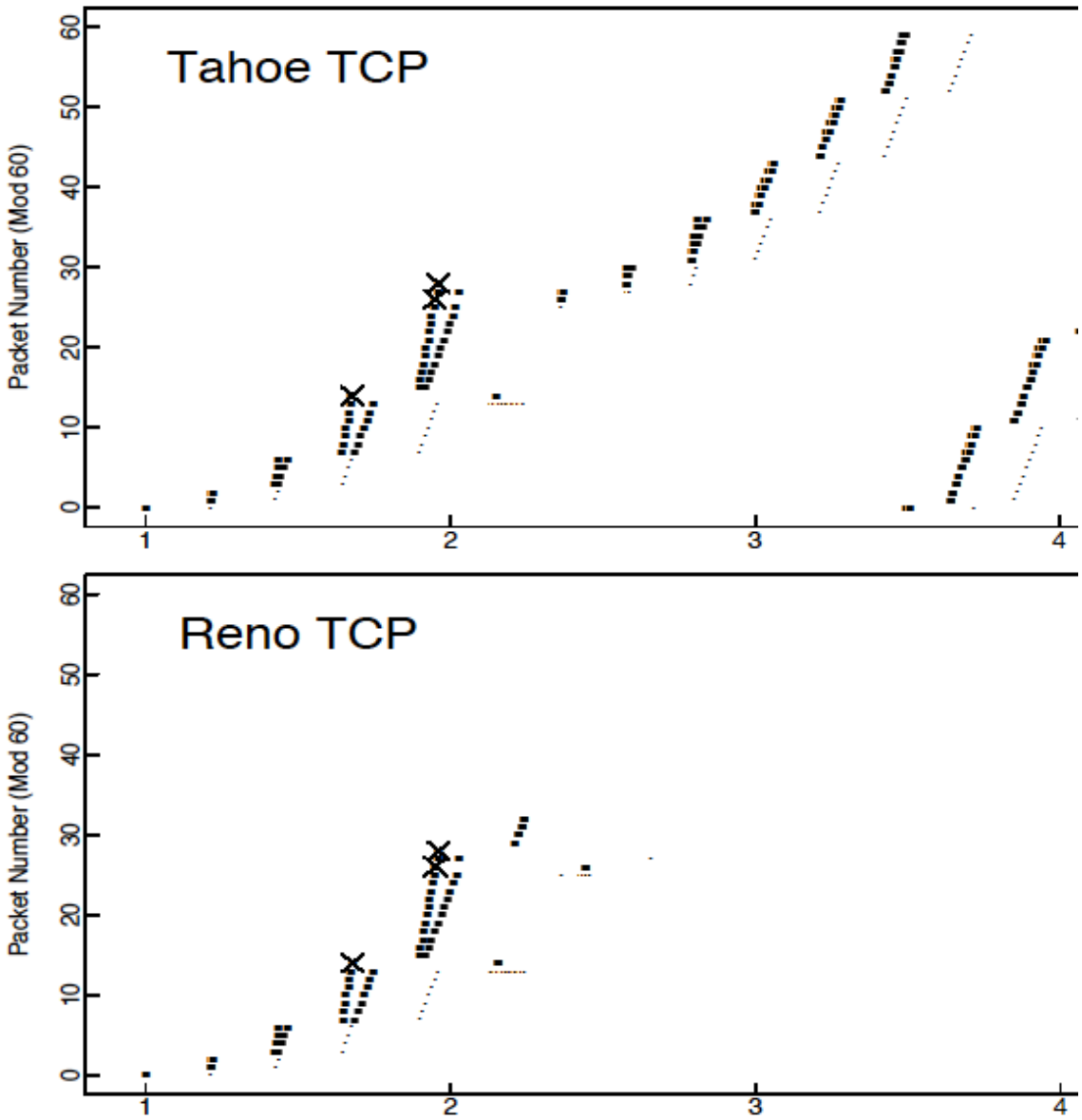


Figure 4 from "Simulation-based Comparison of Tahoe, Reno, and SACK TCP" by Fall and Floyd, SIGCOMM 1996.

Reno vs. NewReno

Two Lost Segments

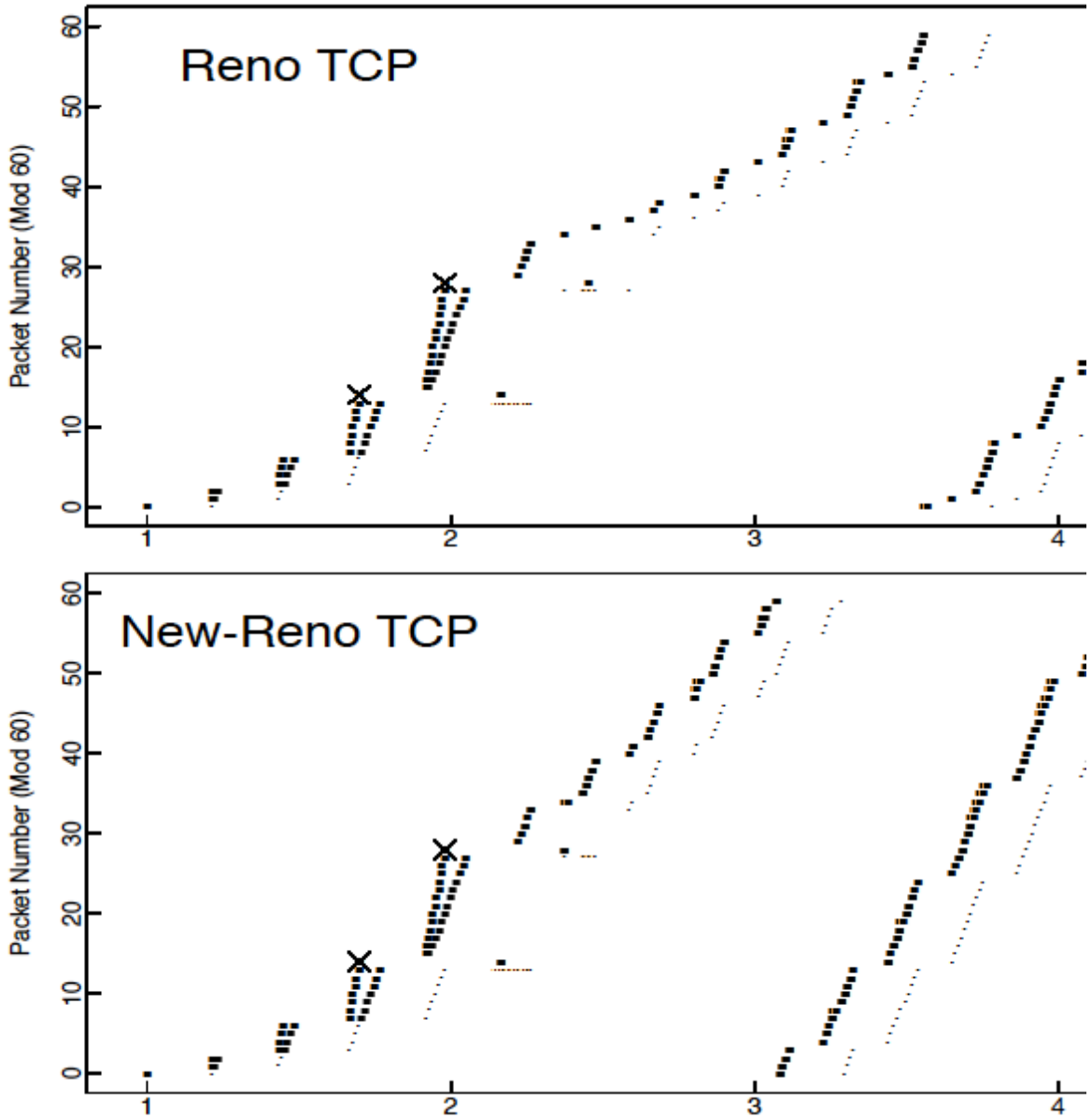


Figure 3 from "Simulation-based Comparison of Tahoe, Reno, and SACK TCP" by Fall and Floyd, SIGCOMM 1996.

Reno vs. NewReno

Three Lost Segments

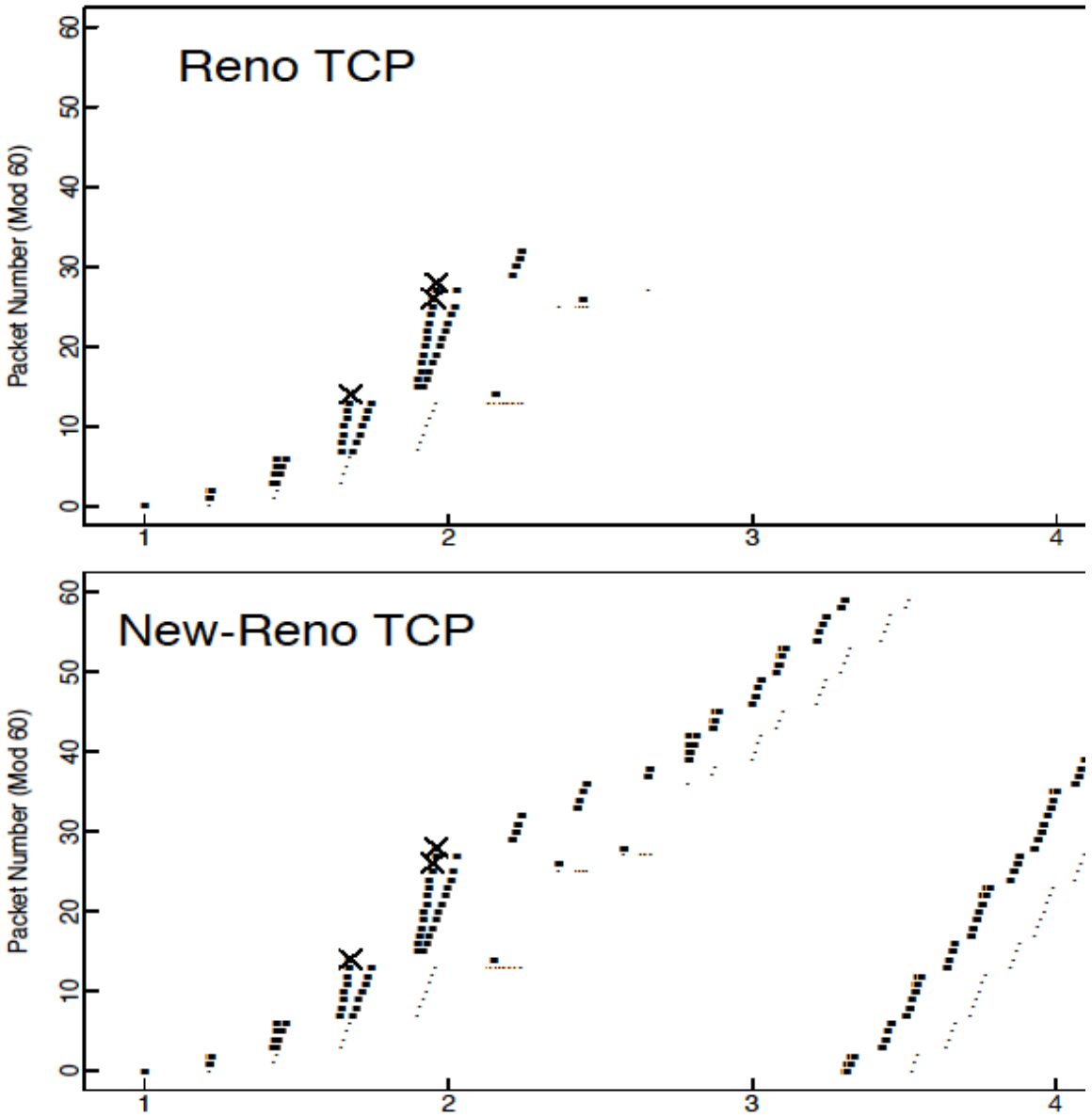
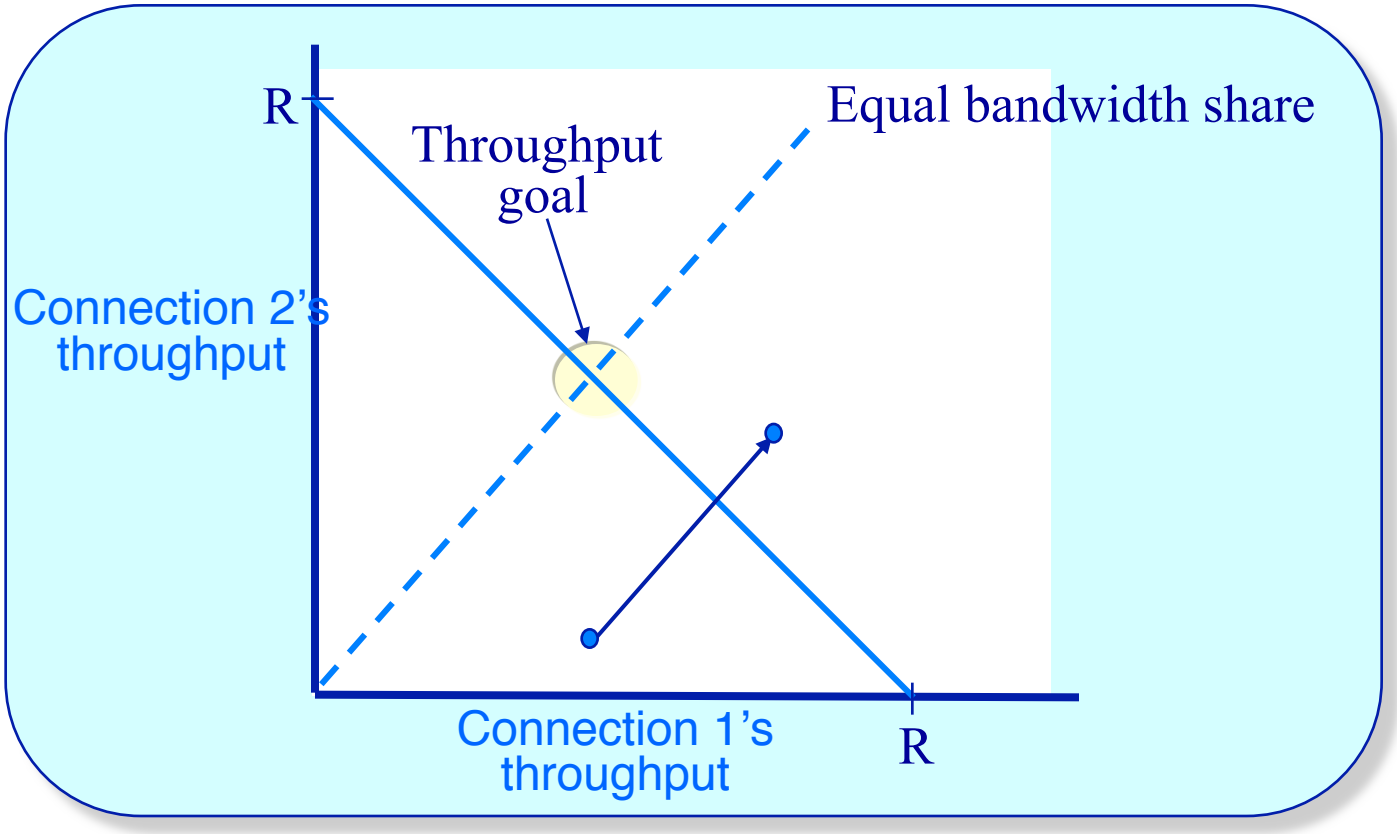


Figure 4 from "Simulation-based Comparison of Tahoe, Reno, and SACK TCP" by Fall and Floyd, SIGCOMM 1996.

TCP Throughput

Is TCP fair?



- Consider two competing connections with same *MSS* and *RTT*
  - » Additive increase gives slope of 1, as throughput increases
  - » Multiplicative decrease decreases throughput proportionally