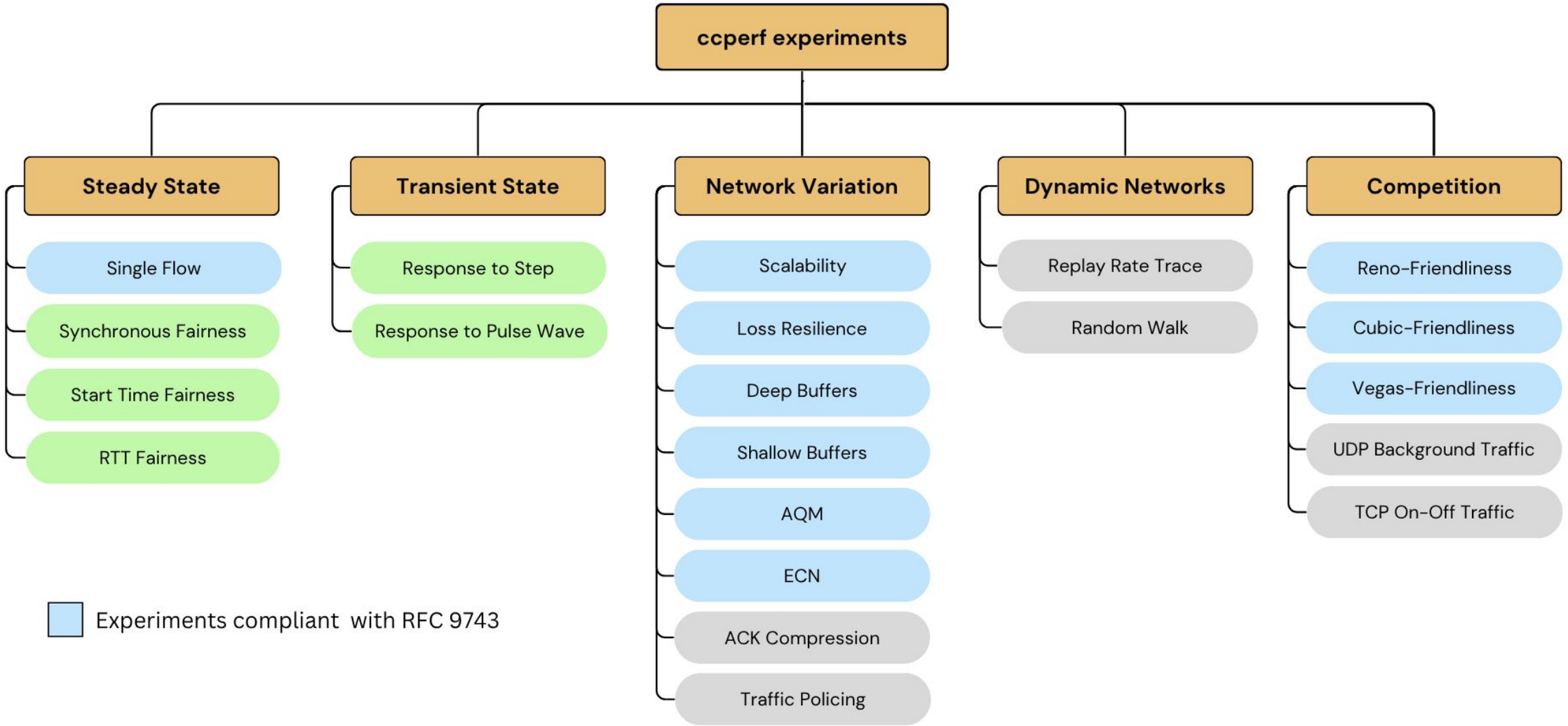
# Testing Congestion Control and Queue Management Mechanisms

Aniket Singh, Anirudh V. Gubbi, Akash Ravi, Satyam Shukla, Shashank G., Deepa Kumari, Arun Kumar Ramarajan, Ayush Nigam, Monika Gautam, Jayesh Akot, Mohit P. Tahiliani

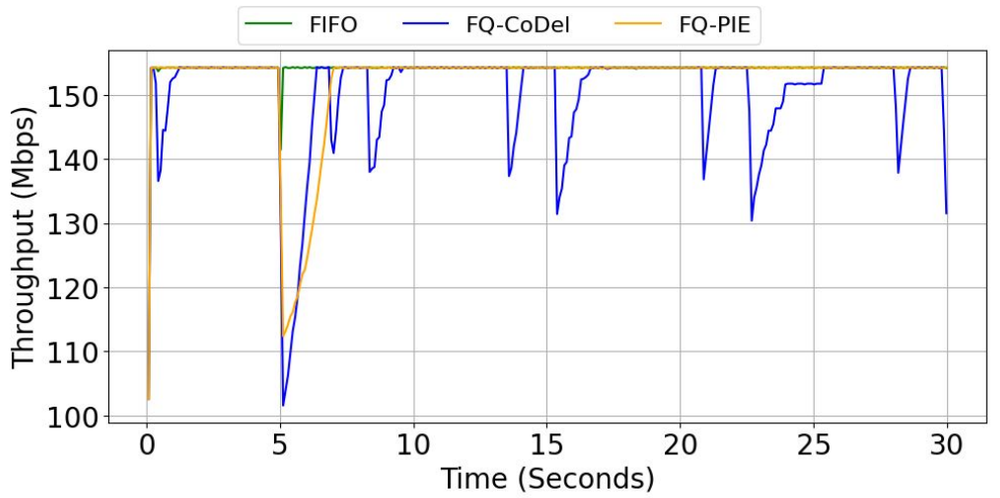
Related groups: ccwg, iccrg and tsvwg

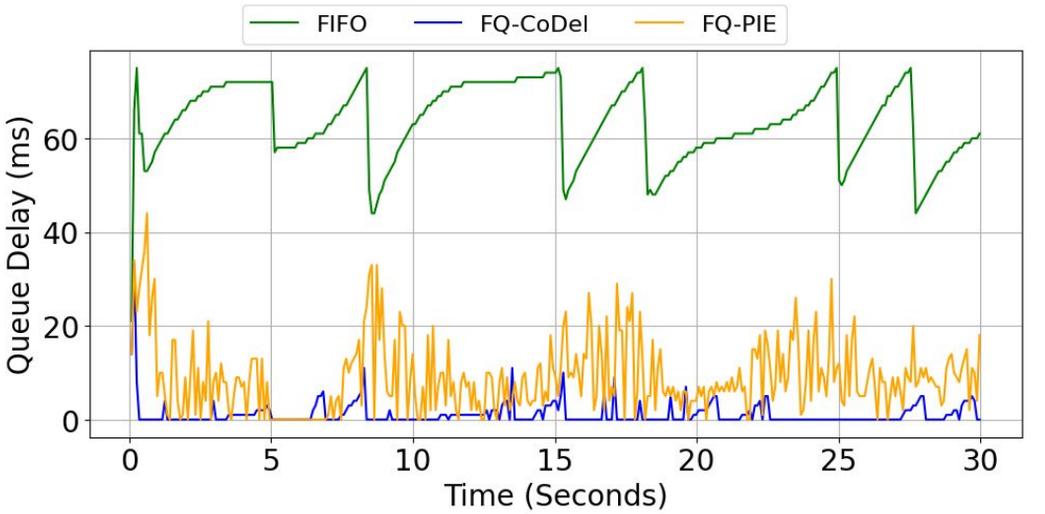
# Objectives

1. Testing of FQ-CoDel and FQ-PIE using ns-3, NeST and WiFi APs
   - Status: **completed**
2. Improving the delay-throughput tradeoff with a new version of CoDel
   - Status: **completed**
3. An example for rate-limited sender implementation in ns-3
   - Status: **pending**
4. Testing the effectiveness of Alternative Backoff with ECN (ABE) using ns-3
   - Status: **completed**
5. Testing and validating the ns-3 implementation of HTB queue discipline
   - Status: **partially completed**

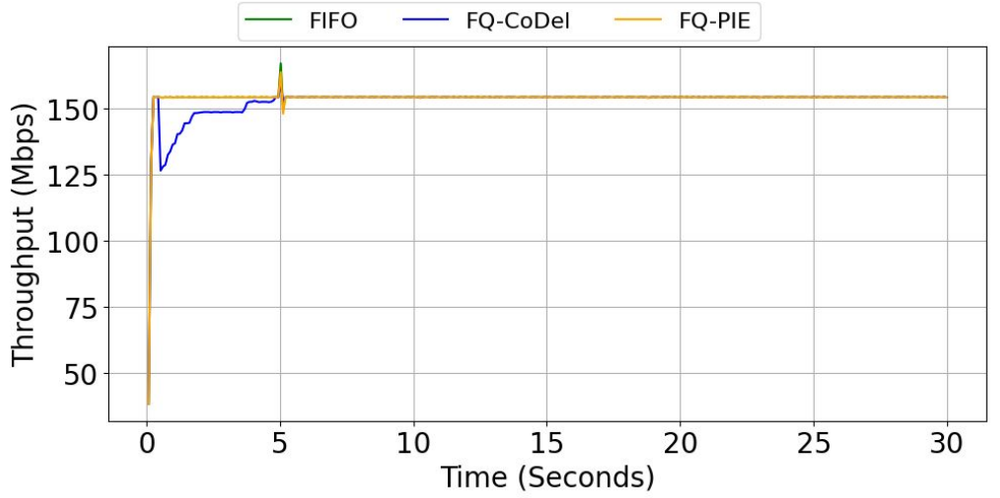

ccperf experiments
Steady State
Single Flow
Synchronous Fairness
Start Time Fairness
RTT Fairness
Transient State
Response to Step
Response to Pulse Wave
Network Variation
Scalability
Loss Resilience
Deep Buffers
Shallow Buffers
AQM
ECN
ACK Compression
Traffic Policing
Dynamic Networks
Replay Rate Trace
Random Walk
Competition
Reno-Friendliness
Cubic-Friendliness
Vegas-Friendliness
UDP Background Traffic
TCP On-Off Traffic
Experiments compliant with RFC 9743

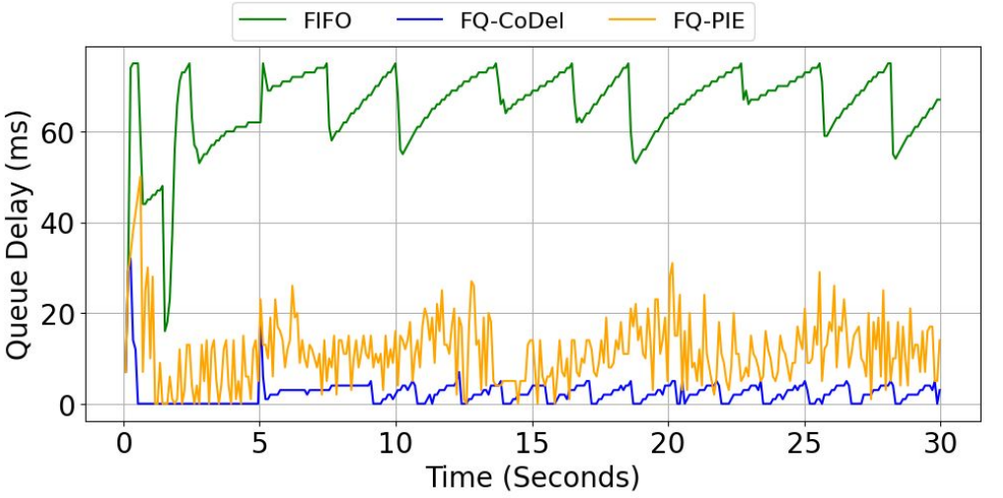
# FQ-*: Increasing RTT from 15ms to 30ms



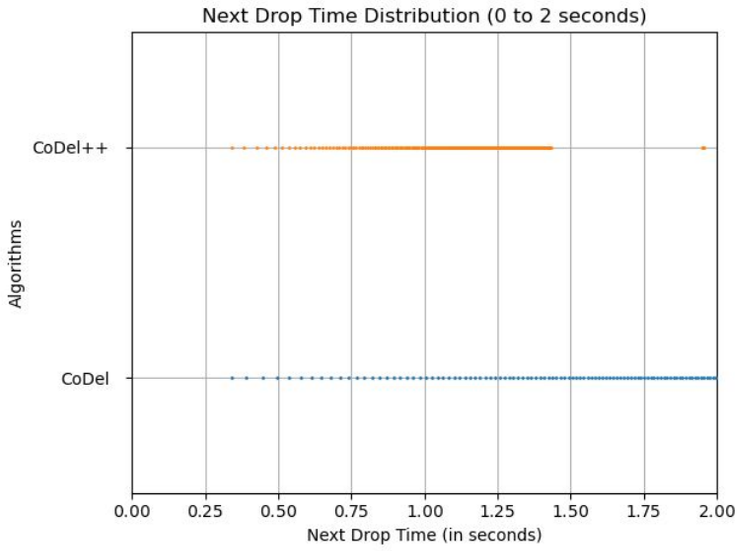

# FQ-*: Decreasing RTT from 30ms to 15ms

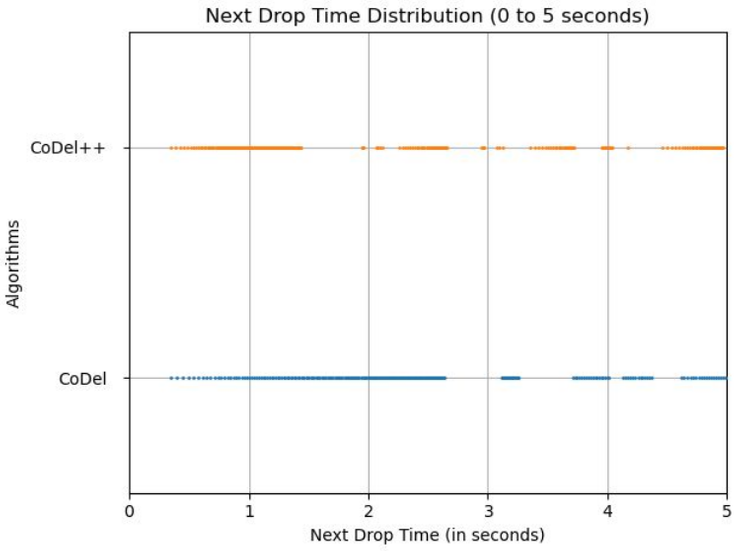


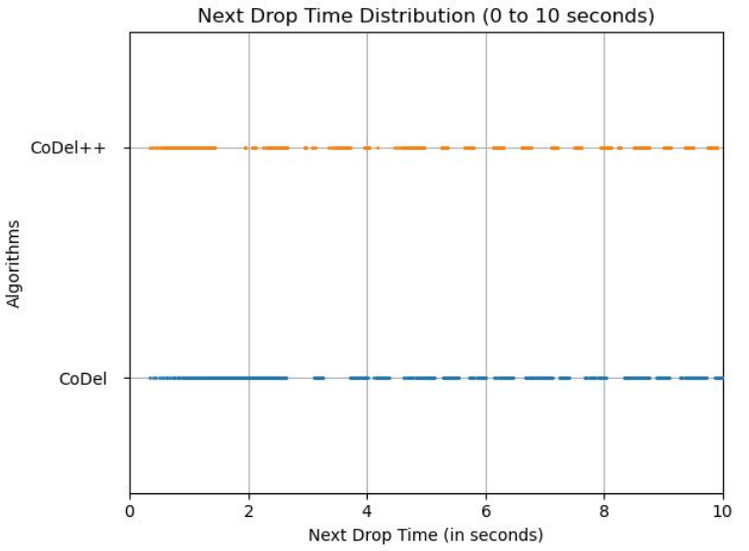



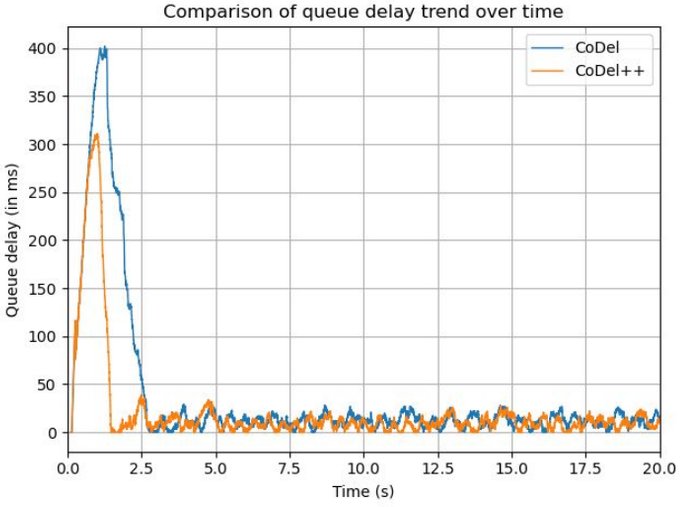

Join us at tsvwg: https://www.ietf.org/id/draft-tahiliani-tsvwg-fq-pie-02.html

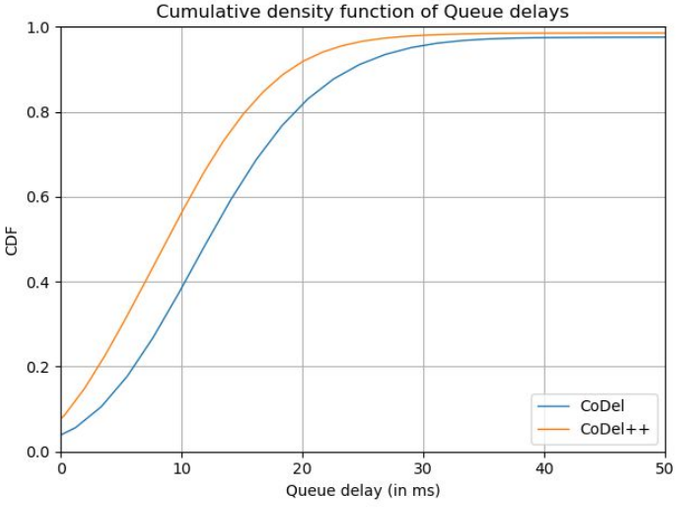
# CoDel vs CoDel++



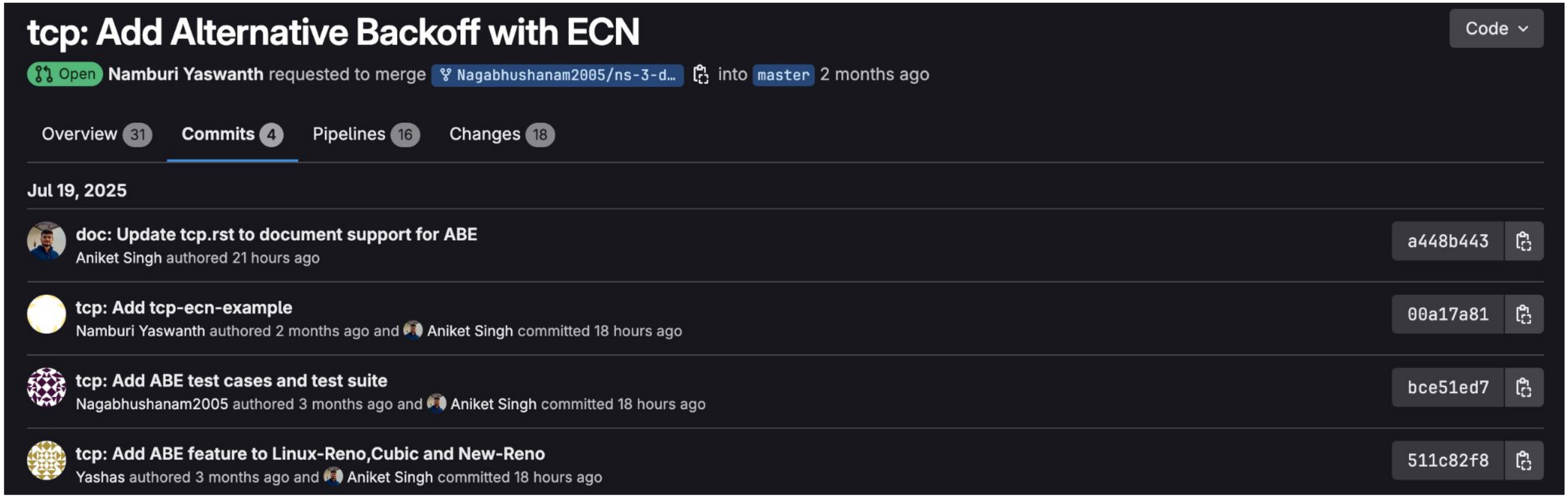




Join us at HotRFC: https://datatracker.ietf.org/meeting/123/materials/agenda-123-hotrfc-sessa-01

# ABE merge request on ns-3




Merge request: https://gitlab.com/nsnam/ns-3-dev/-/merge_requests/2410/

COSH

IIESoc

# Thank you!