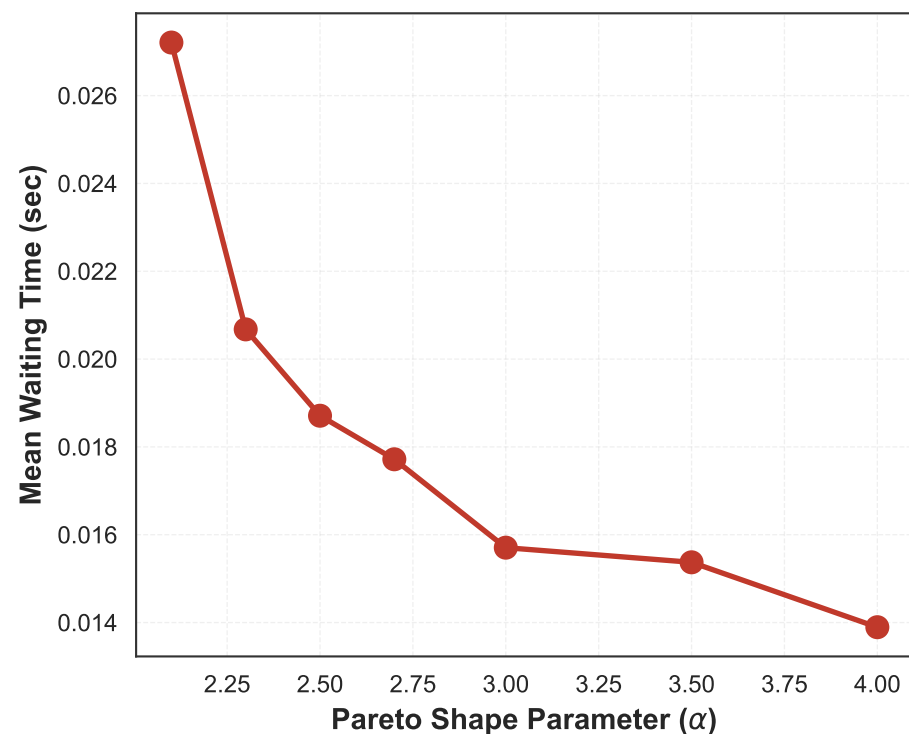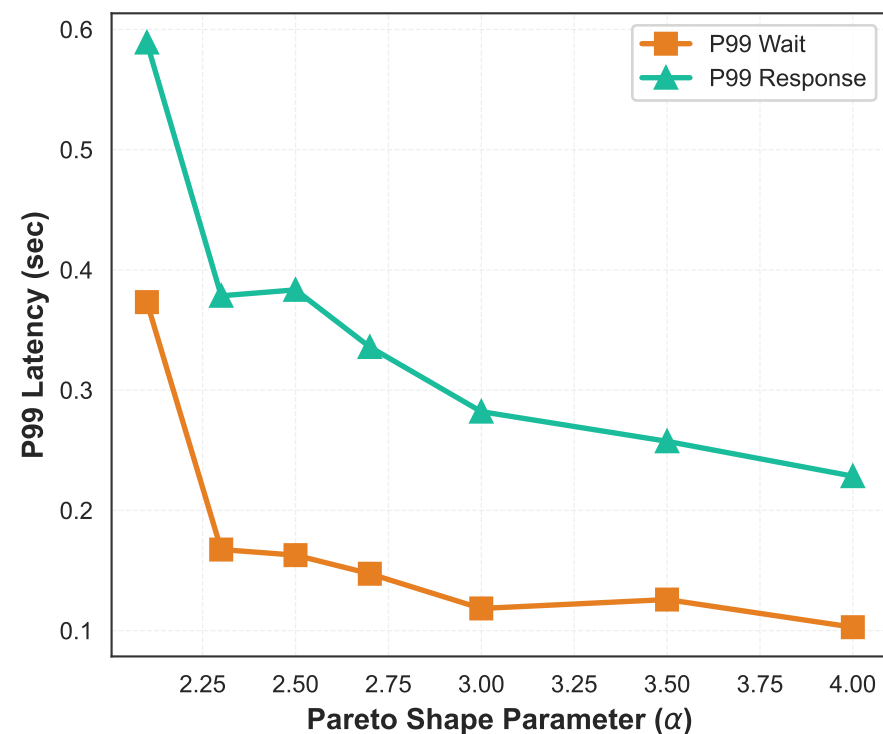**Heavy-Tail Impact on Queue Performance**
M/G/N Queue: $\lambda = 100$ **msg/sec**, $N = 10$ **threads**, $\mu = 12$ **msg/sec/thread**
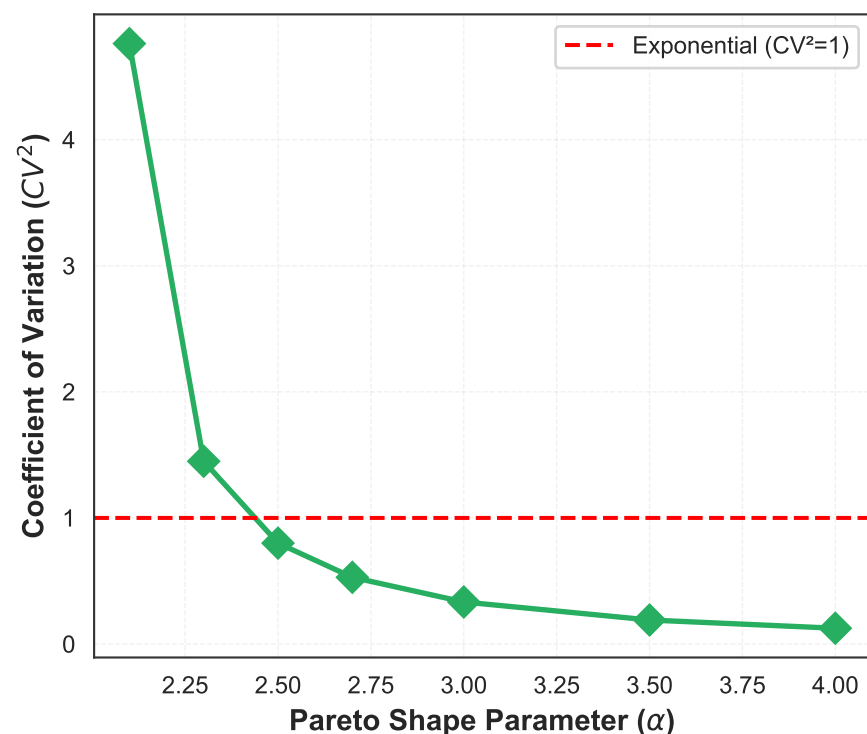
(A) Mean Wait Time vs α

Mean Waiting Time (sec) vs Pareto Shape Parameter (α)

(B) P99 Latency vs α

P99 Latency (sec) vs Pareto Shape Parameter (α)

- P99 Wait
- P99 Response

(C) Service Time Variability vs α

Coefficient of Variation (CV^2) vs Pareto Shape Parameter (α)

- Exponential ($CV^2=1$)

(D) Response Time CDF

Cumulative Probability vs Response Time (sec)

- $\alpha=2.1$
- $\alpha=2.5$
- $\alpha=3.0$
- $\alpha=4.0$