BCN Calibration Simulation Results

Zhi-Hern Loh
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Definitions

- Measured Throughput R_1 R_2 ... R_n
- Optimal Throughput T_1 T_2 ... T_n (2.5Gbps for baseline topology)

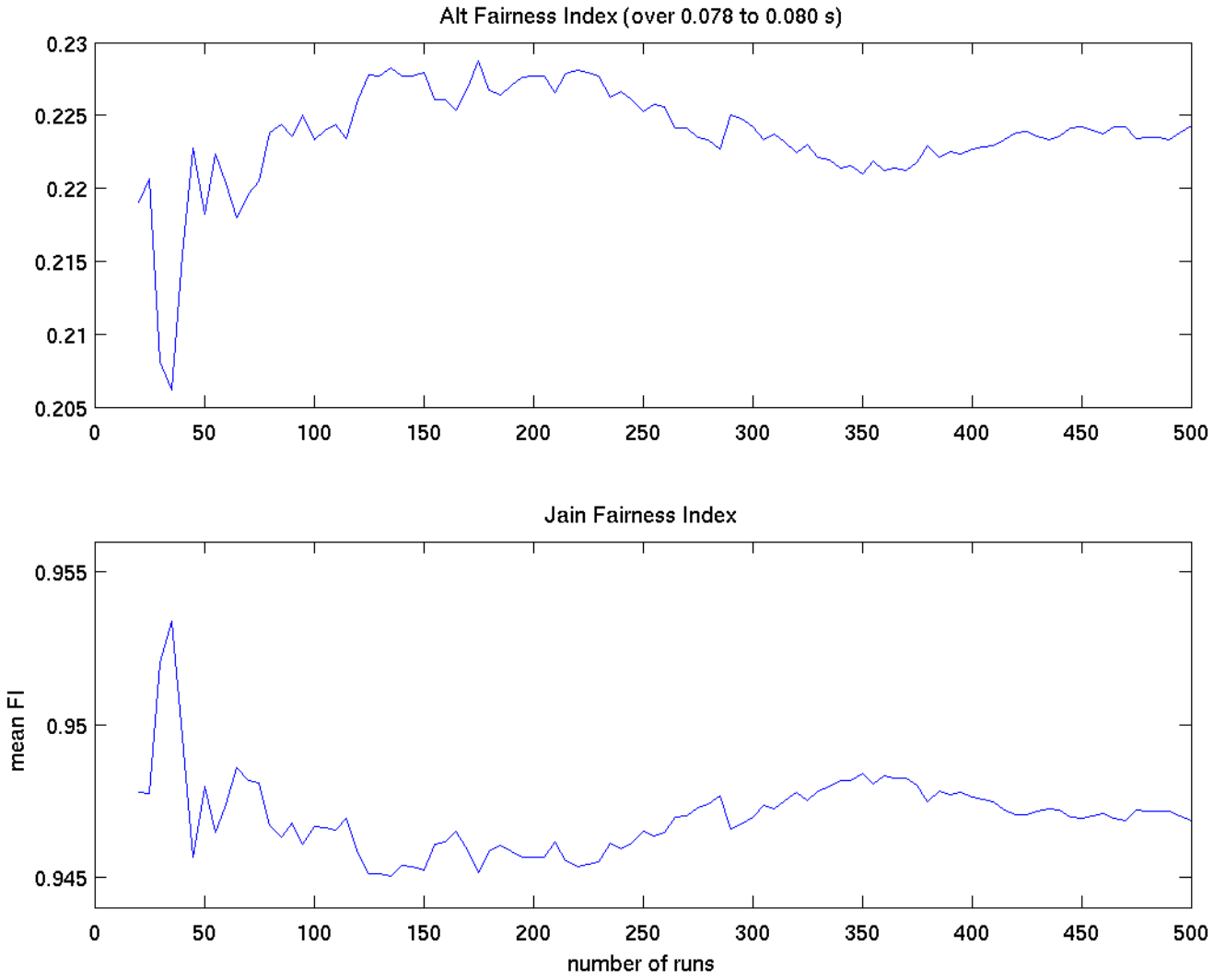
- Jain Fairness Index
  - Jain's normalized throughput $X_i = R_i / T_i$
  - $FI = (sum(X_i))^2 / (N * sum(X_i^2))$
- Alternate Fairness Index
  - $FI = (1/T) * sqrt((1/N) * sum_{i=1}^{N} ((R_i-T)^2))$

Sample Results

- Rates, R_i = mean measured rate over sample interval (78-80ms)
- Normalized deviation, ND_i = (R_i – T) / T
- Max = maximum ND_i over all i, Min = minimum ND_i over all i, Mean = mean ND_i over all i.

Run	Max	Min	Mean	Berg.	Jain.
231.0000	0.4677	0.0376	0.2519	0.3159	0.9091
232.0000	0.1406	0.0598	0.1016	0.1061	0.9888
233.0000	0.2451	0.1121	0.1788	0.1894	0.9653
234.0000	0.4709	0.0424	0.2368	0.2822	0.9260
235.0000	0.1453	0.0527	0.0998	0.1056	0.9890
236.0000	0.6063	0.0709	0.3046	0.3816	0.8726
237.0000	0.1762	0.1525	0.1646	0.1649	0.9735
238.0000	0.2451	0.1168	0.1818	0.1886	0.9656
239.0000	0.4543	0.0685	0.2273	0.2678	0.9331
240.0000	0.1857	0.0764	0.1313	0.1371	0.9816

Convergence of mean FI over many runs



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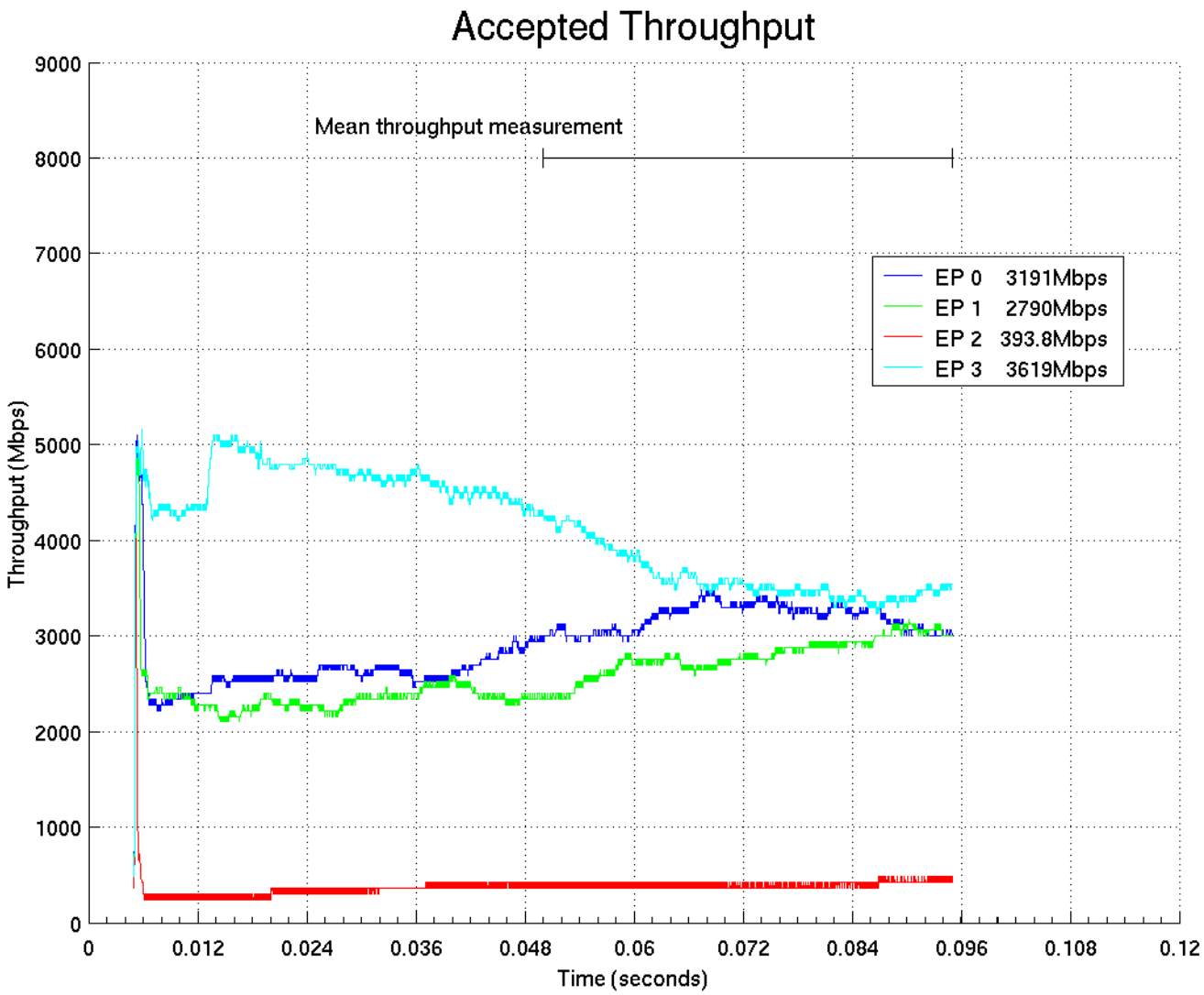
Worst FI Run



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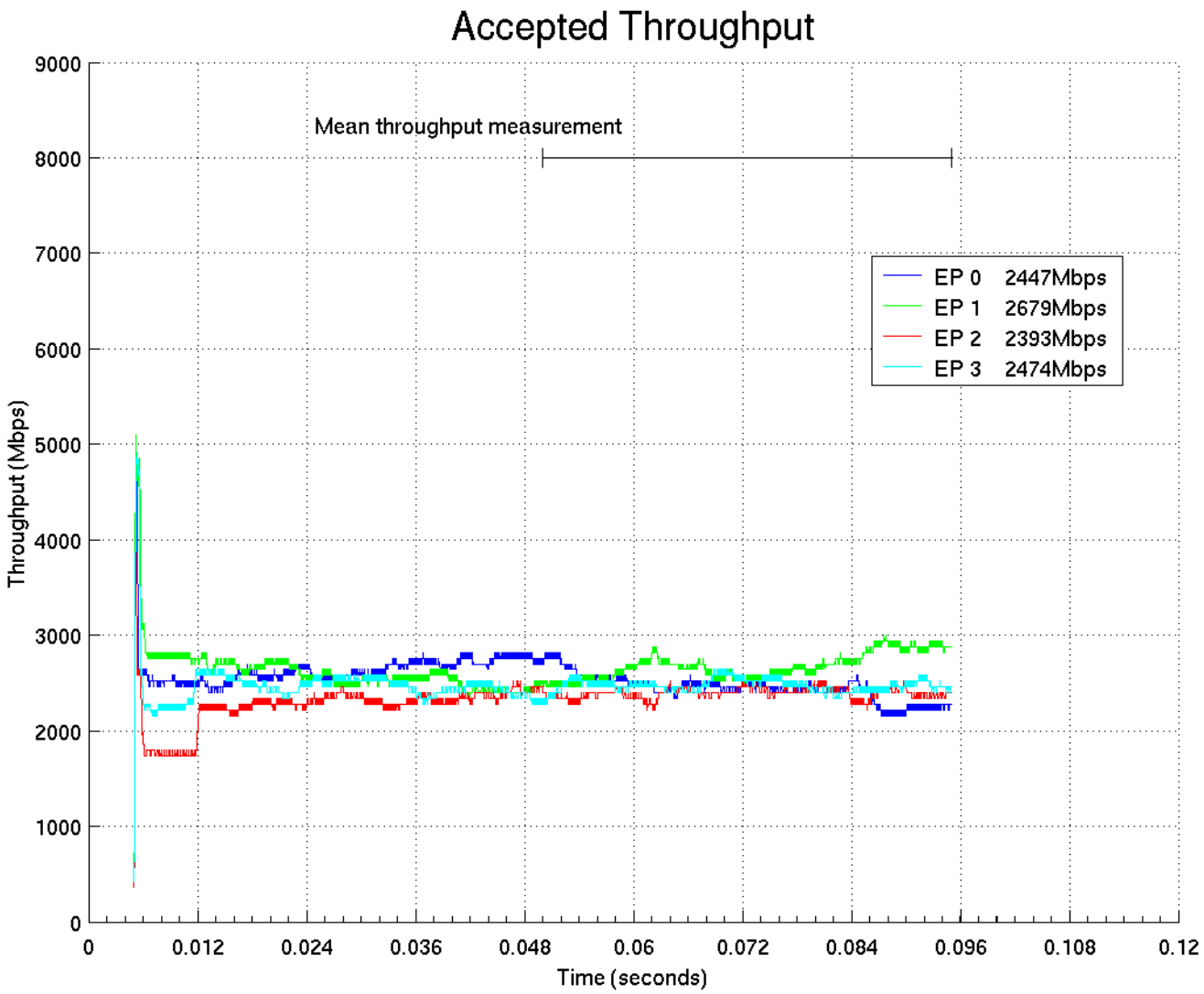
Best FI Run



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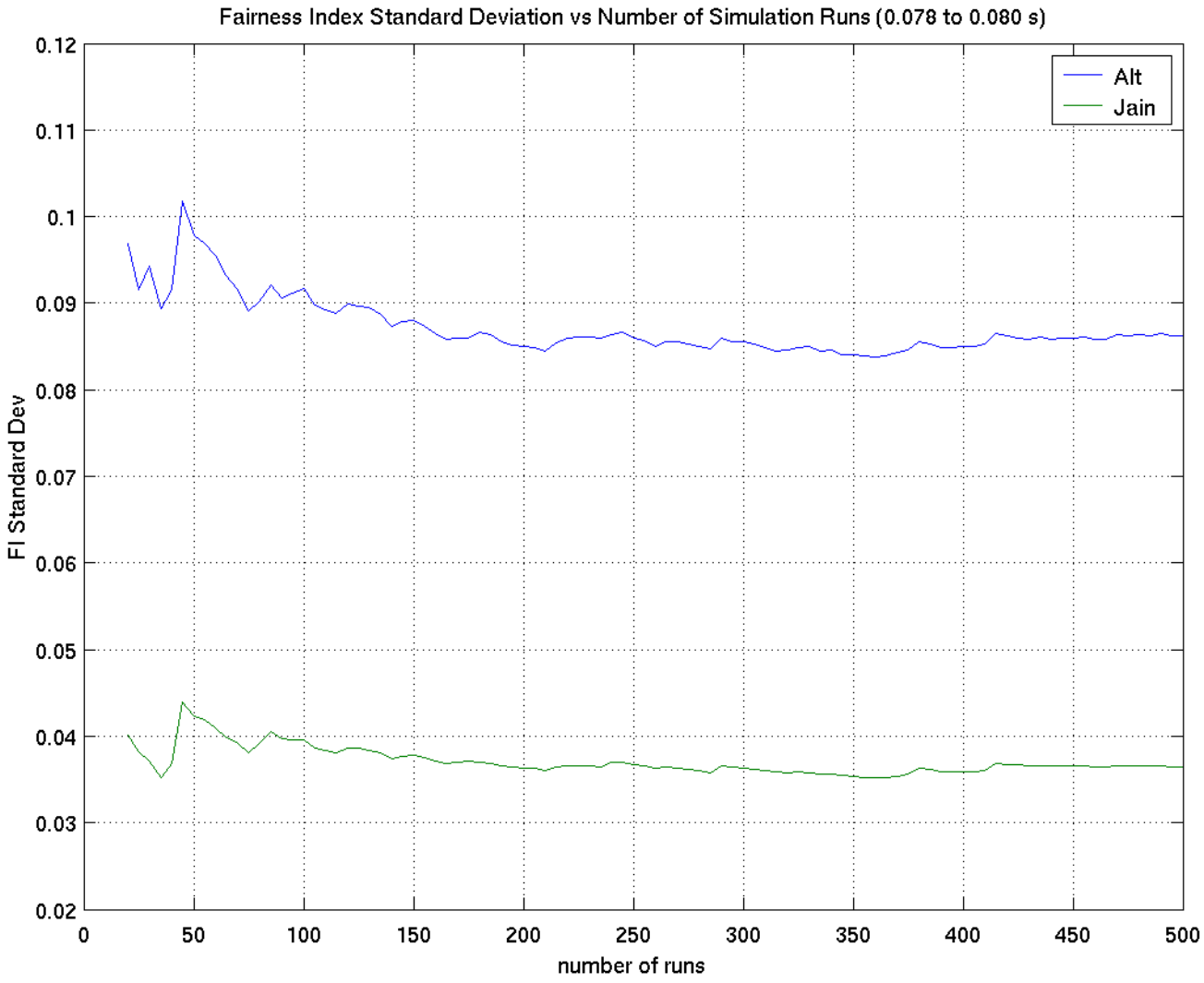
Convergence in FI's standard deviation



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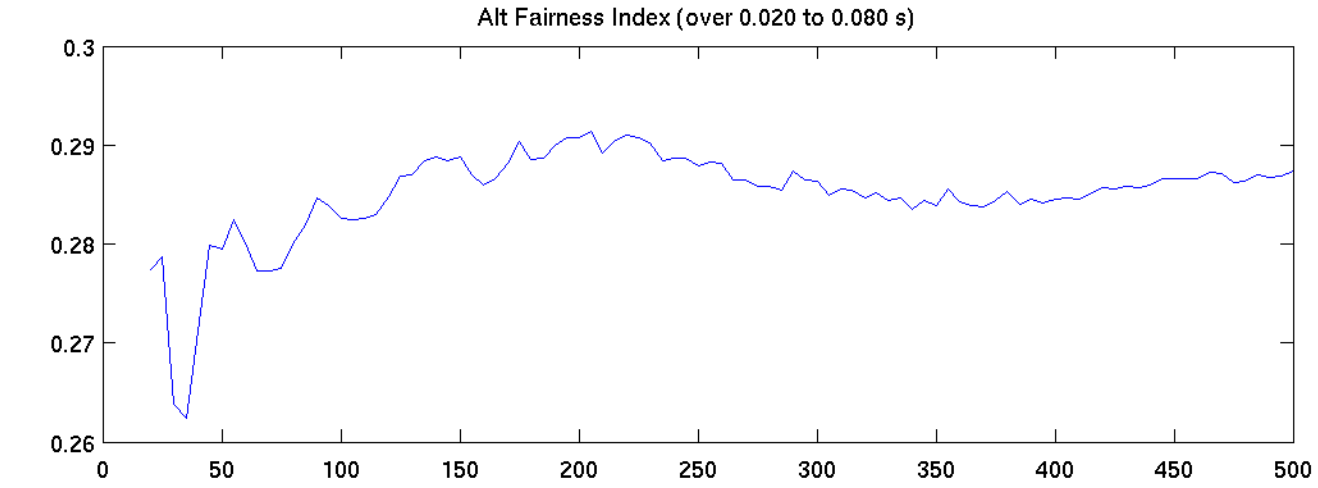
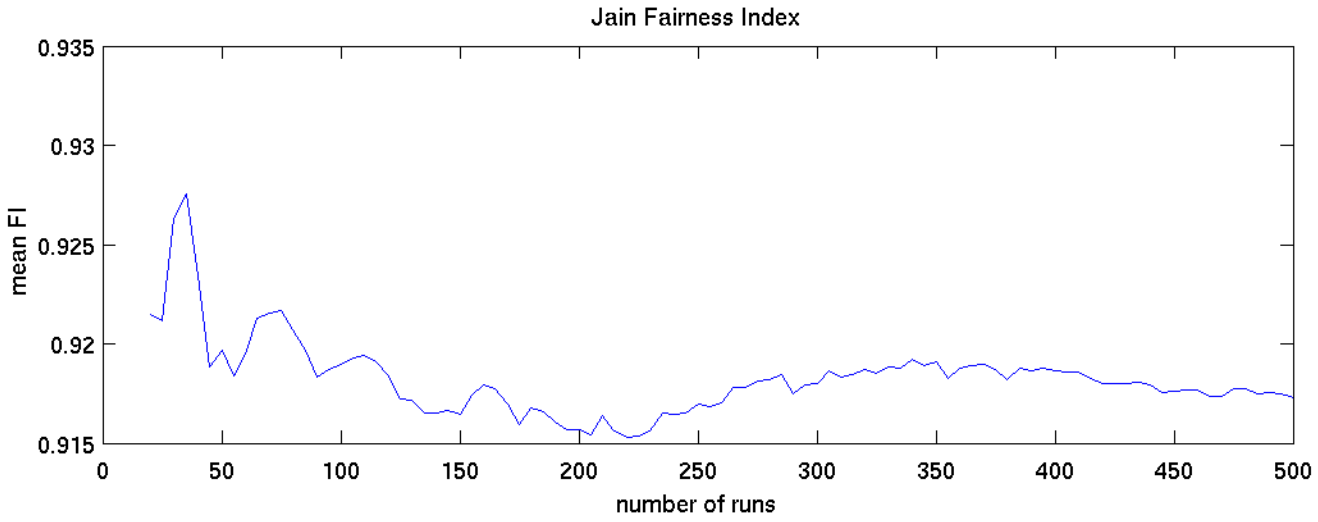
FI mean (20 – 80 ms)





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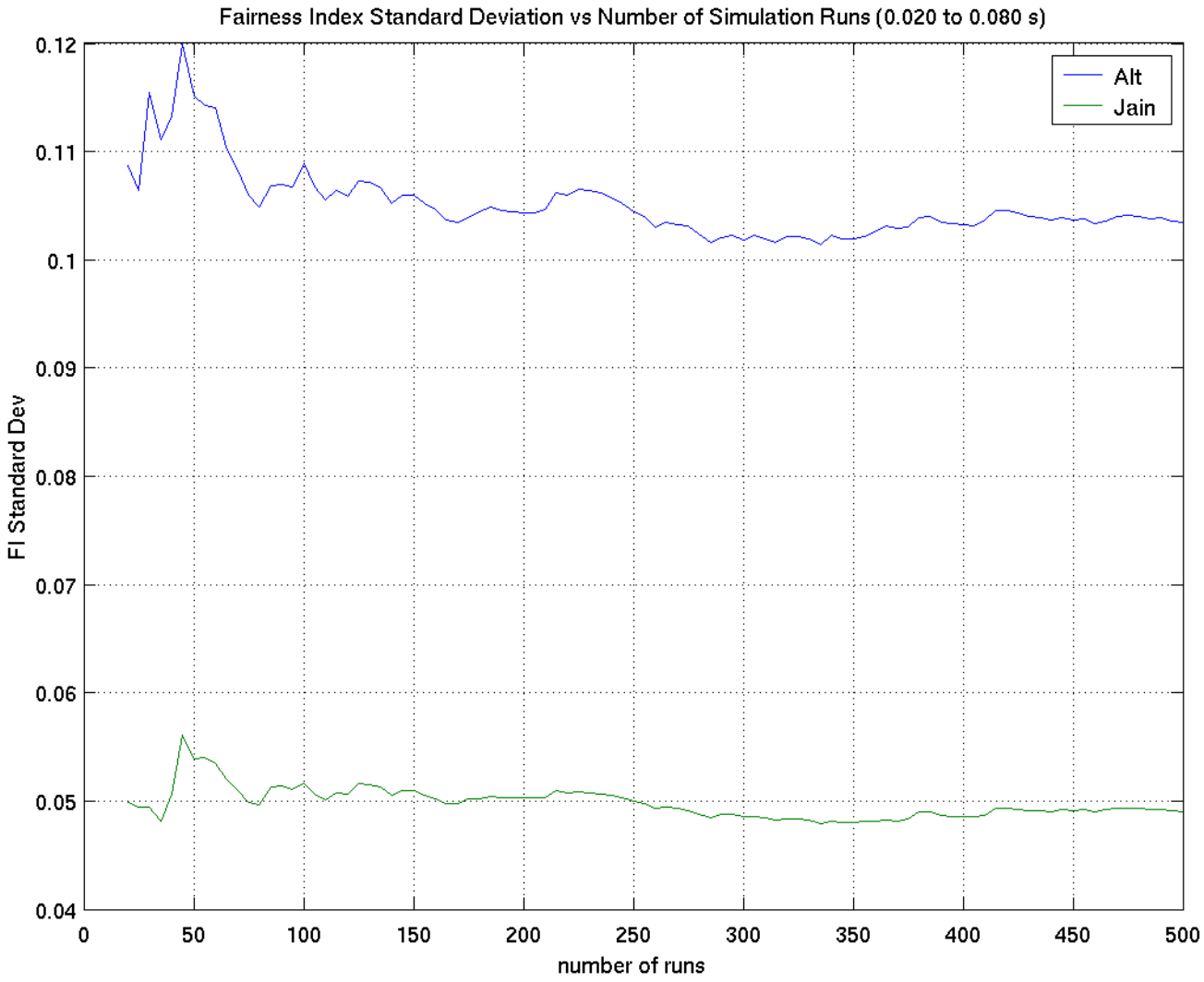
FI STD (20 - 80ms)



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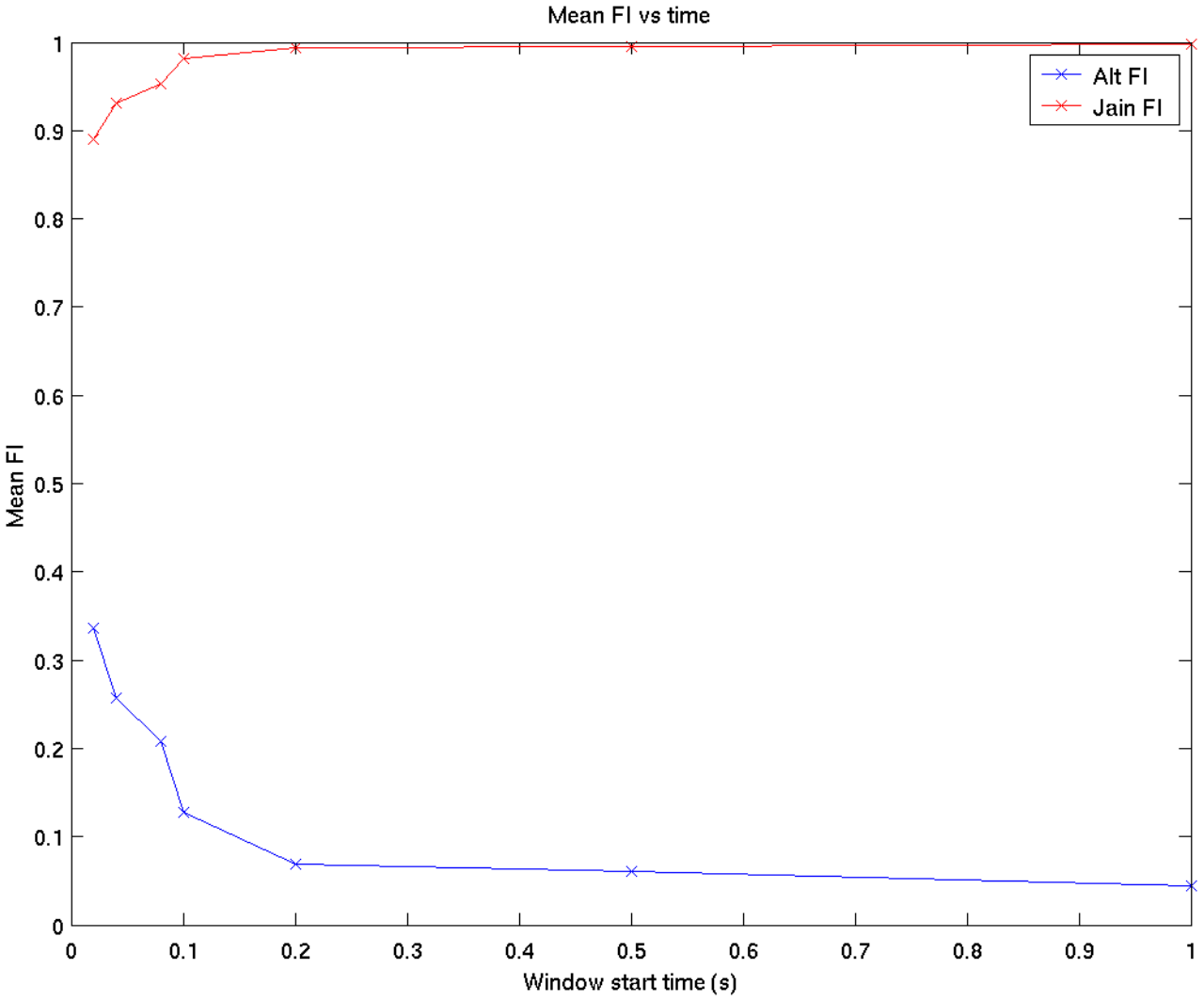
4 Flows continuous (2s), 50 trials

Measurement window = [0.02 0.04 0.08 0.10 0.20 0.50 1.0 2.0];



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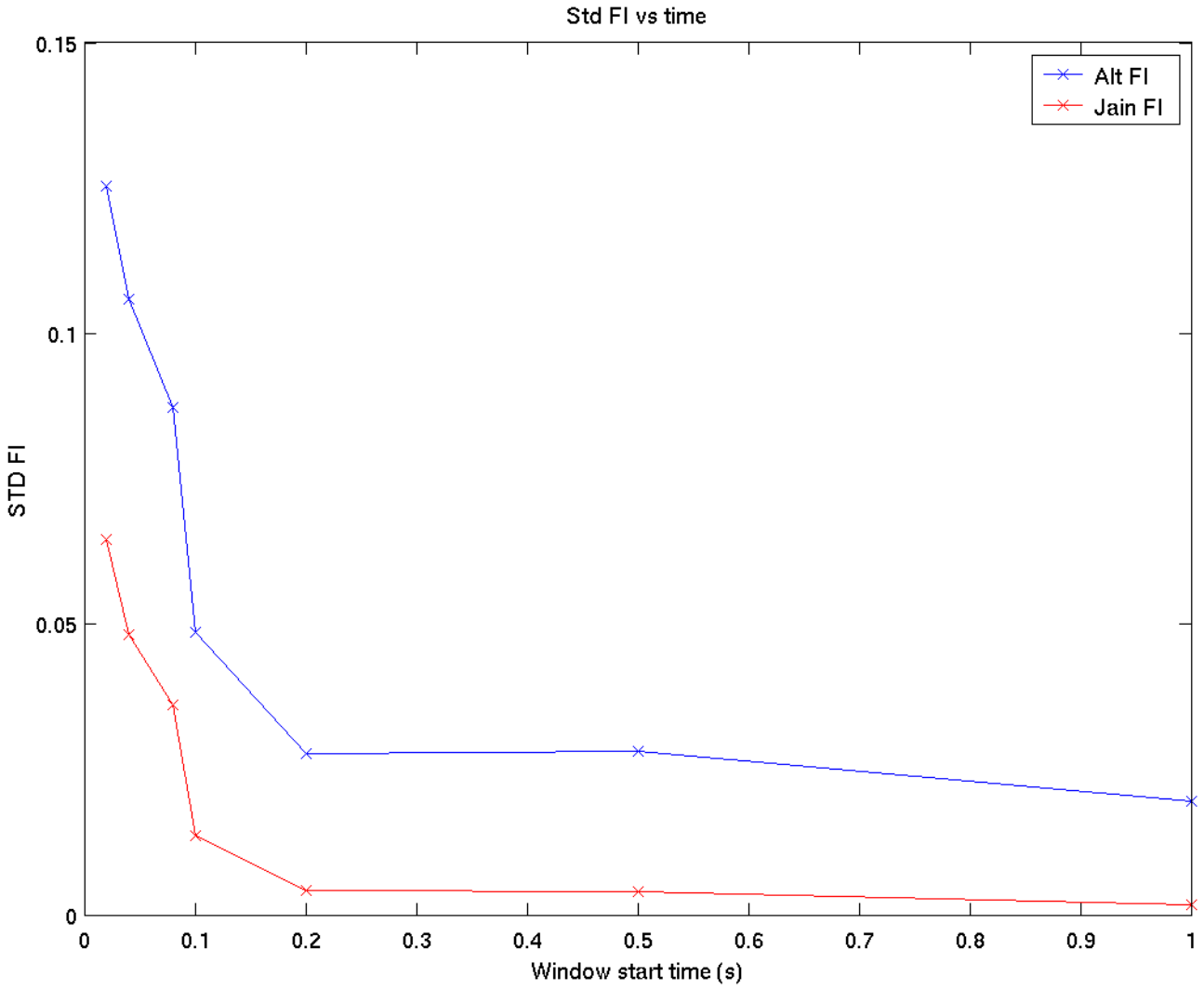
STD 4 flows, 50 trials



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