

Threads test

1. Difficulty 0

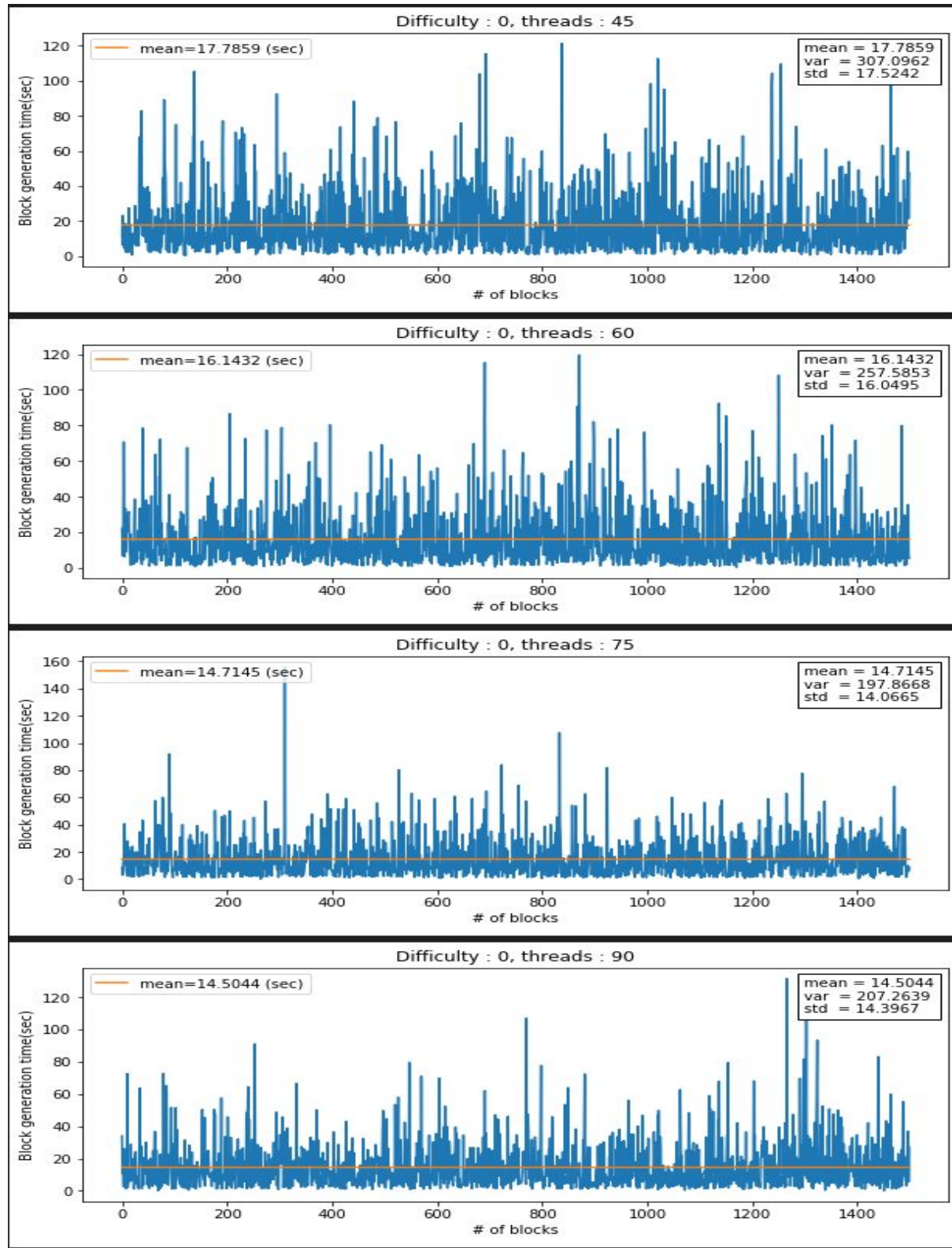
- 45 threads
- 60 threads
- 75 threads
- 90 threads

2. Difficulty 3

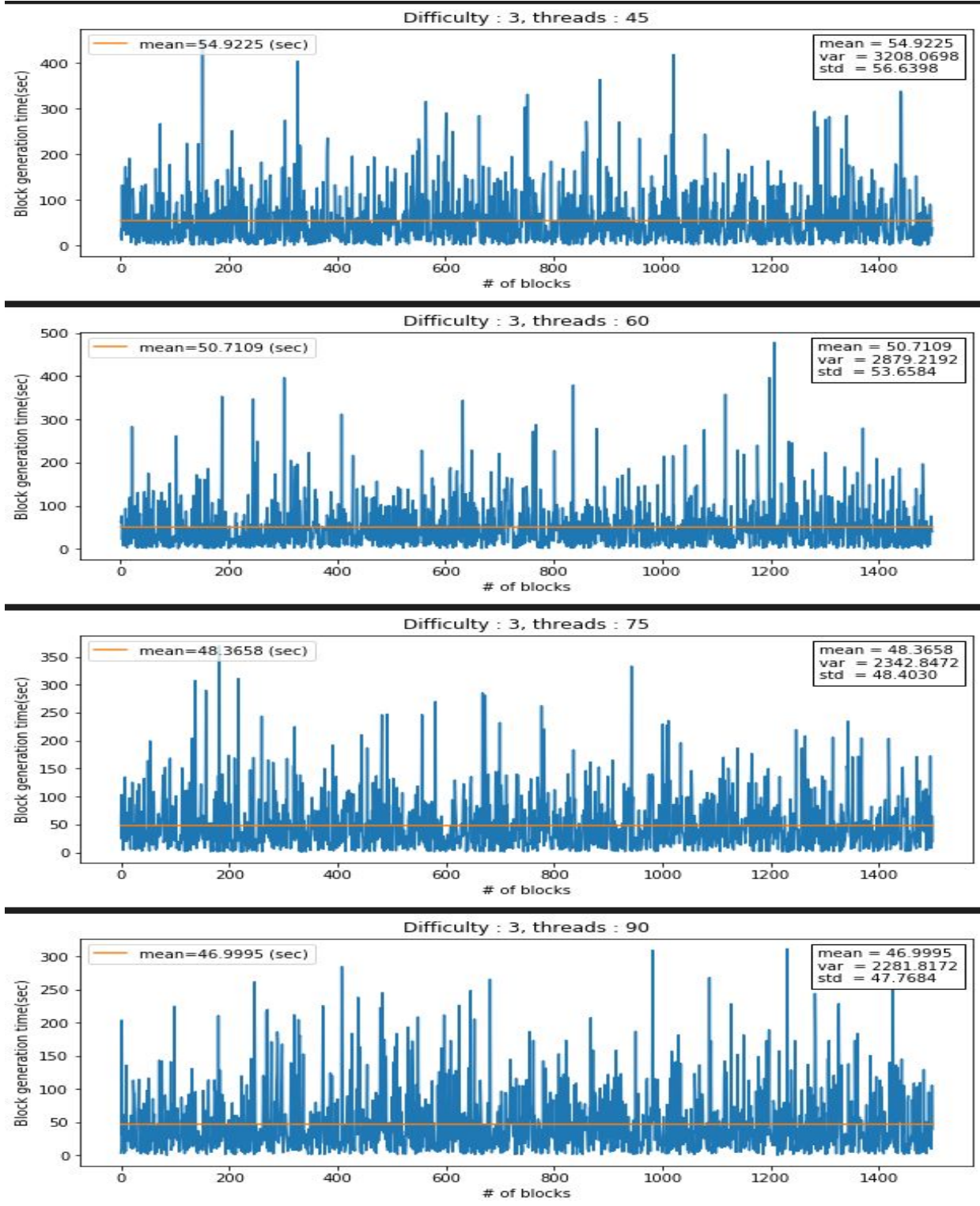
- 45 threads
- 60 threads
- 75 threads
- 90 threads

3. Analysis

1. Difficulty 0



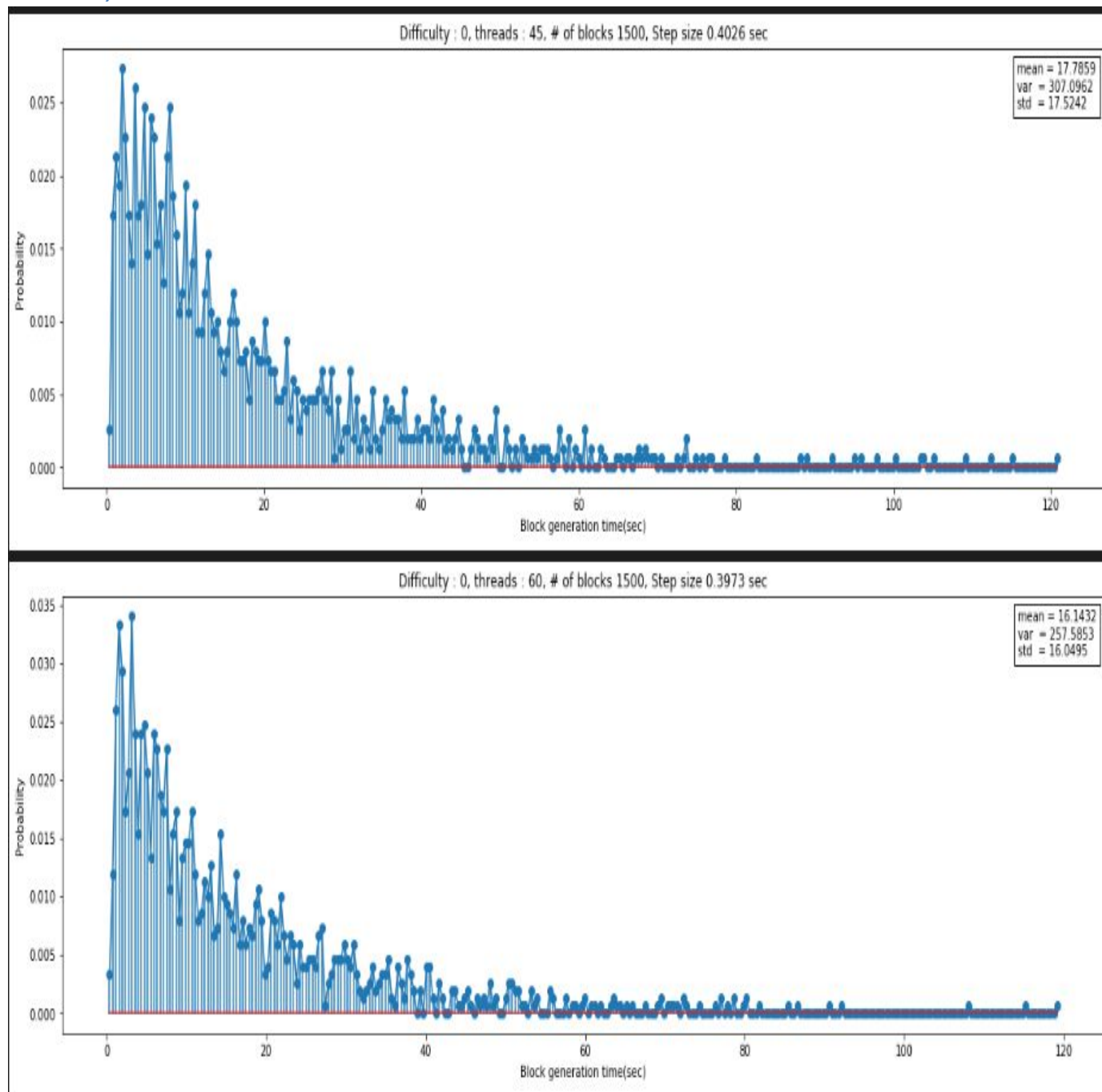
2. Difficulty 3

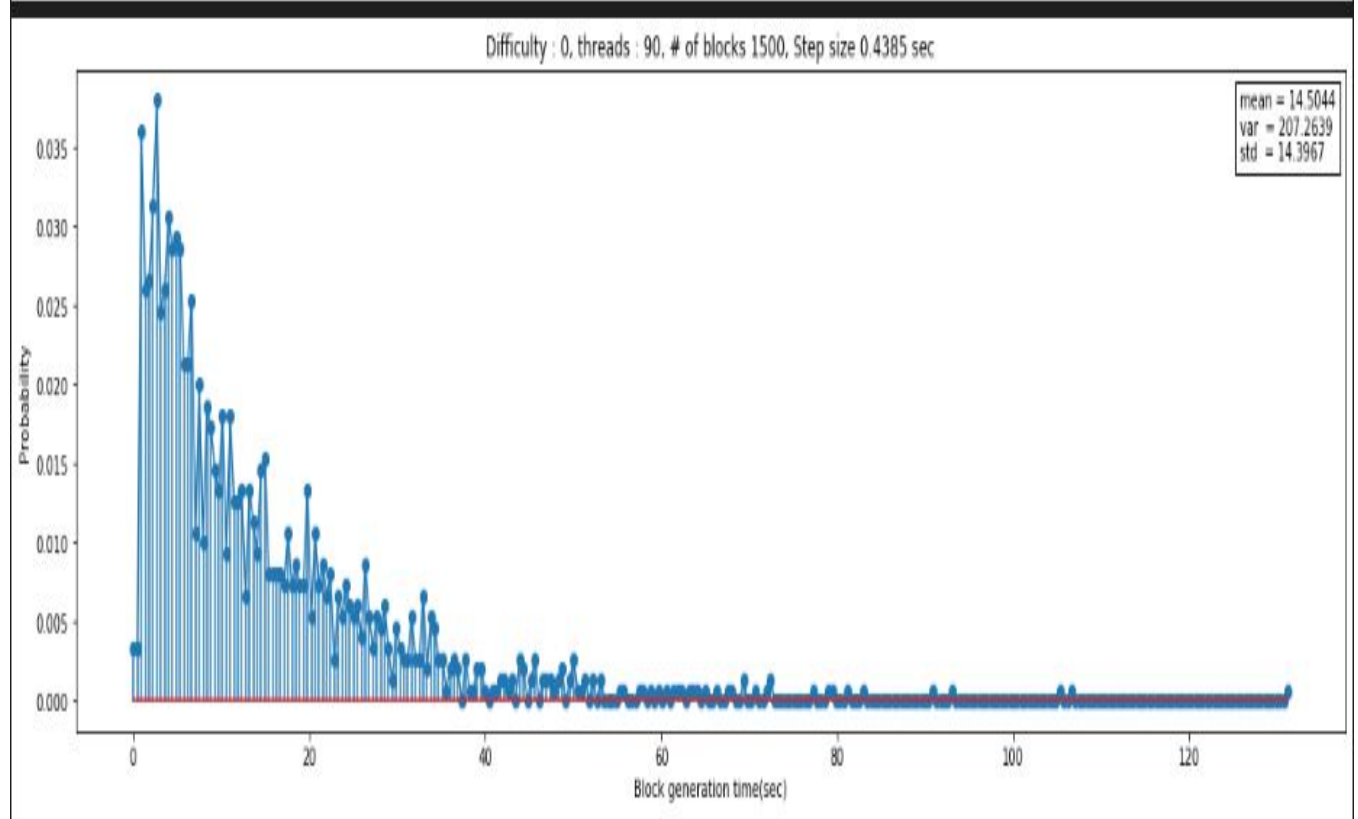
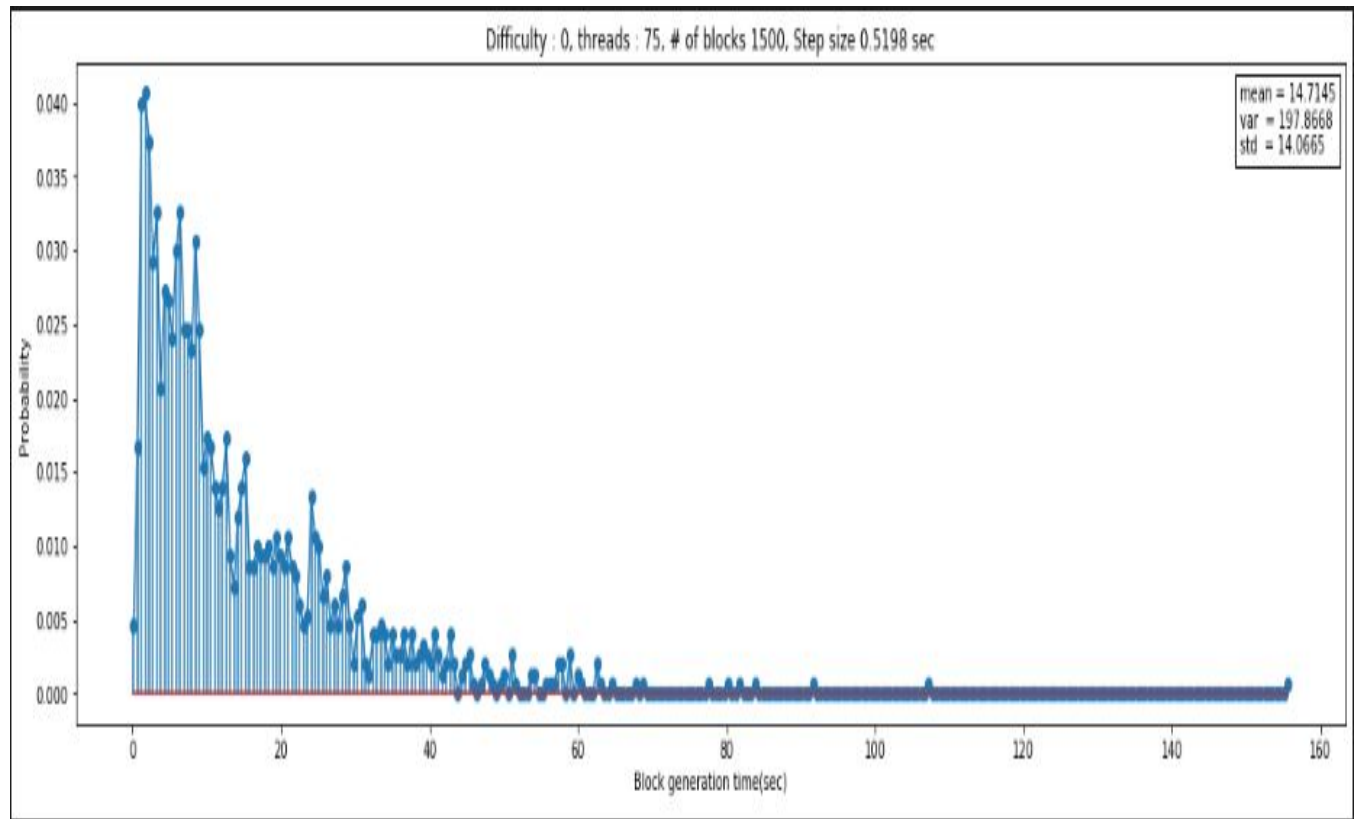


3. Analysis

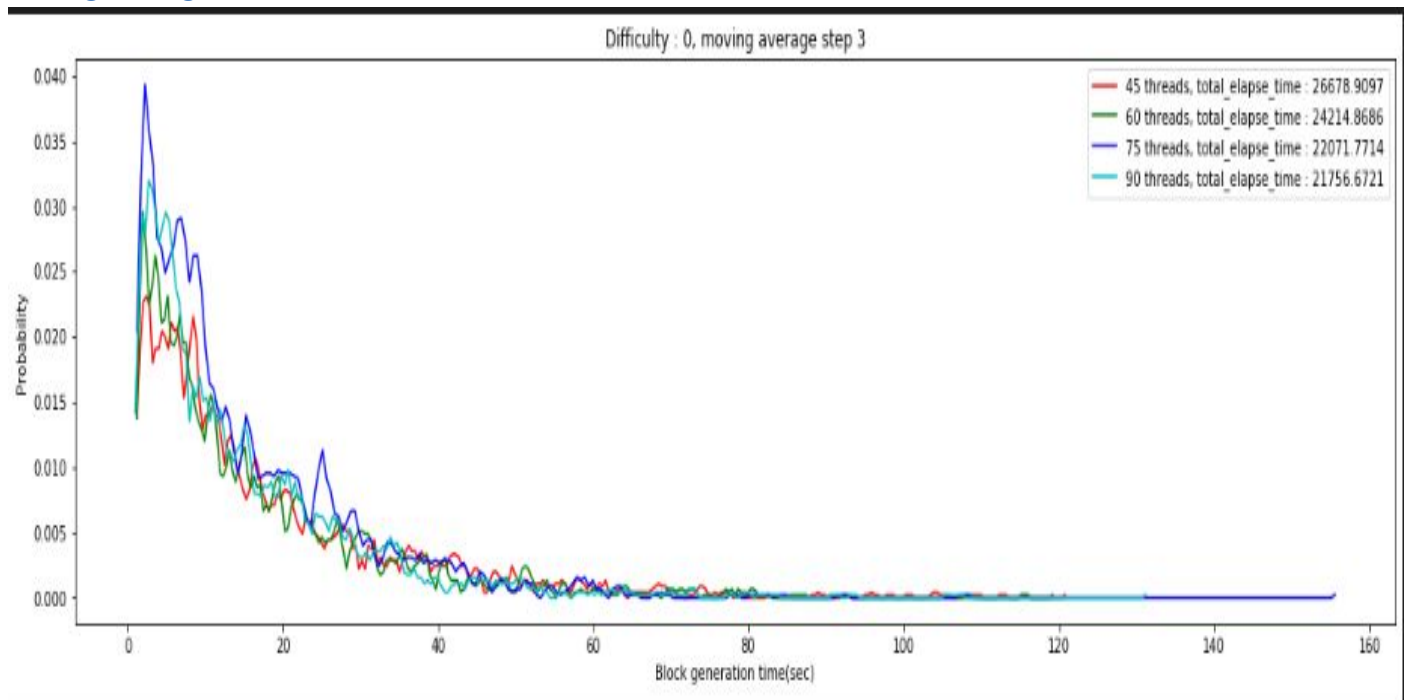
Difficulty 0

Probability distribution

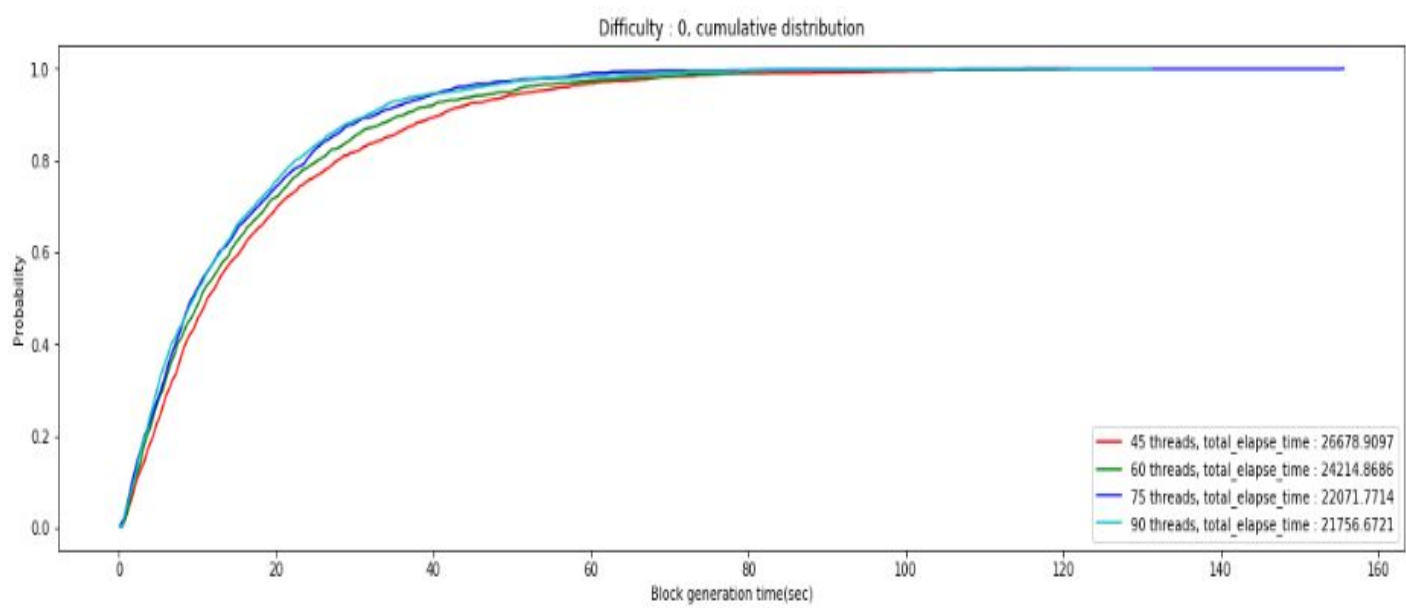




Moving average



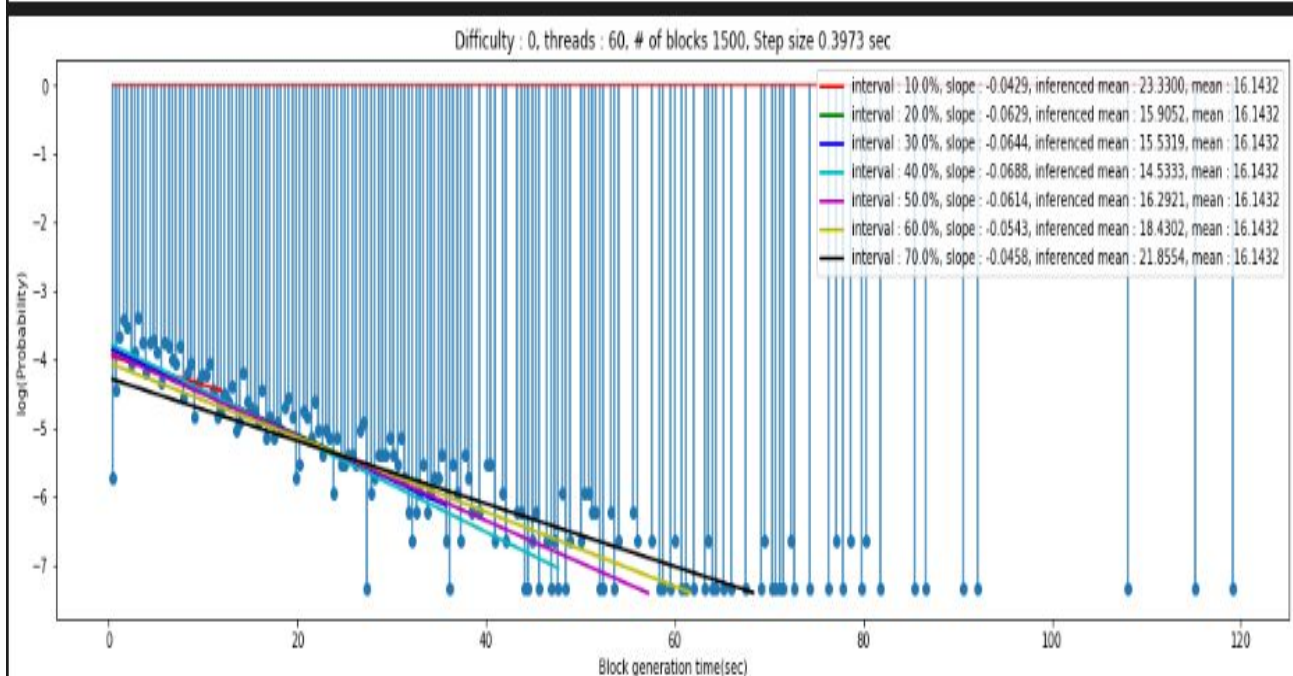
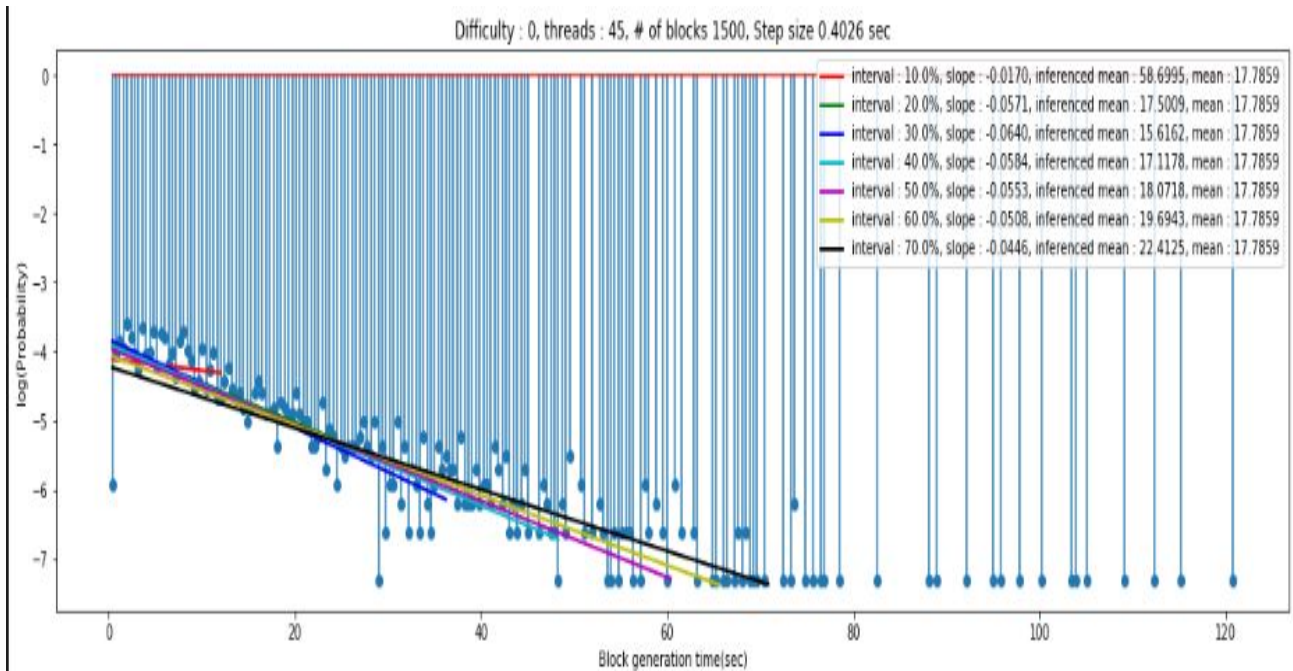
Cumulative distribution

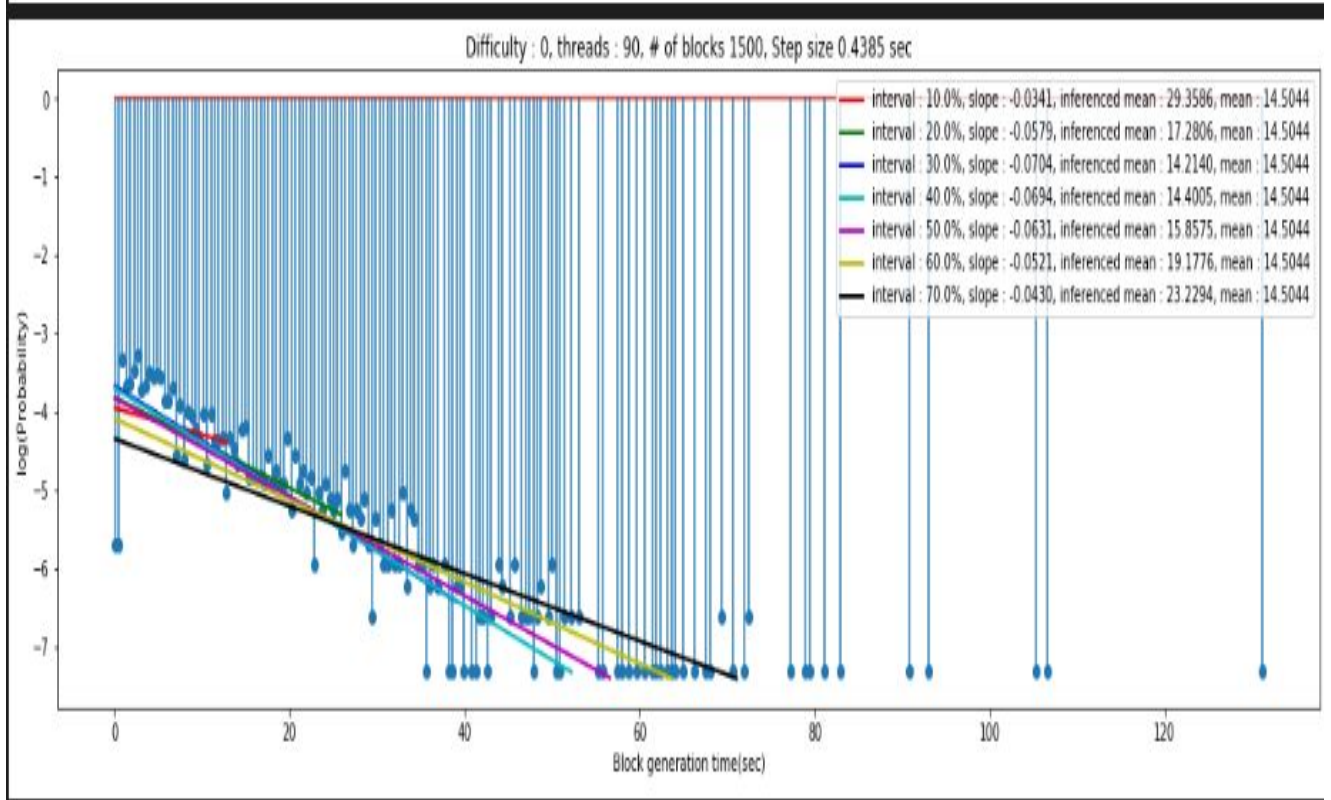
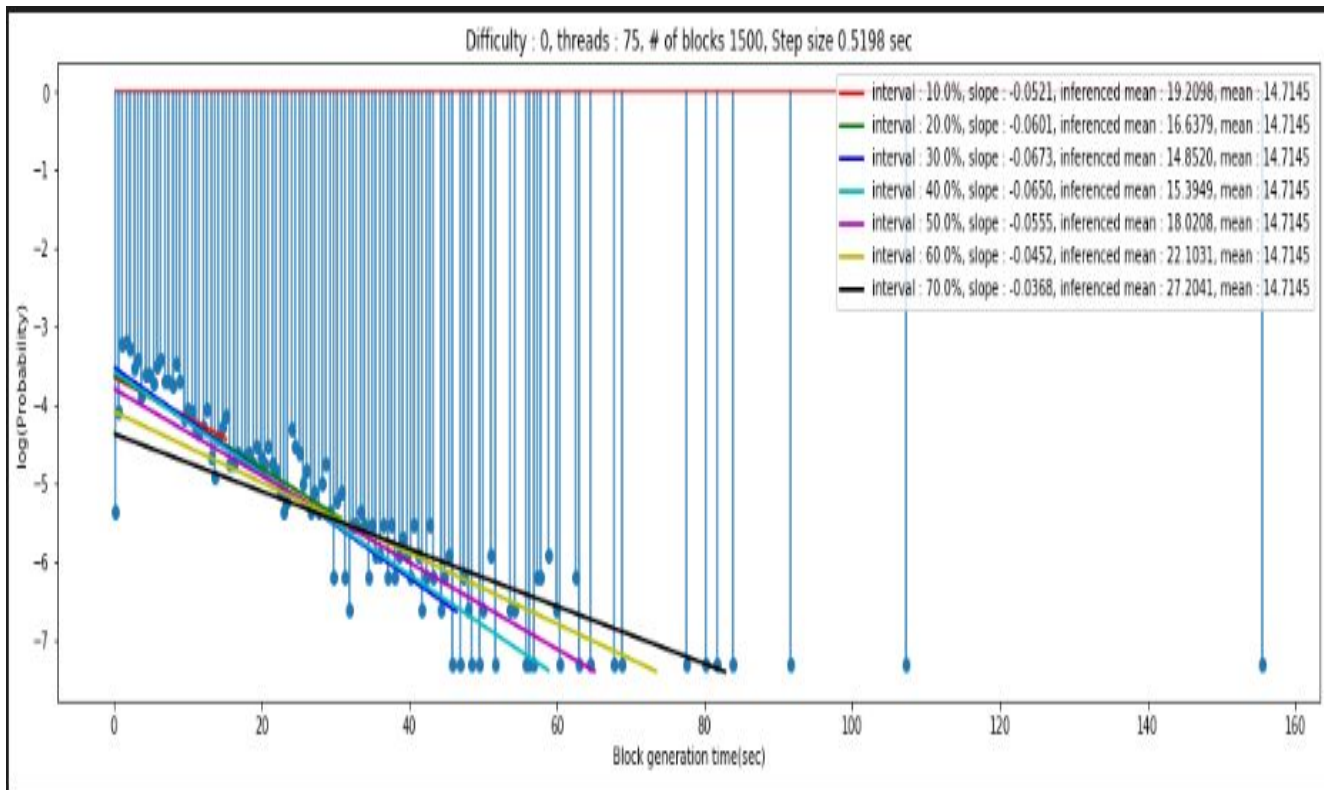


- 20초 미만 구간에서 90 스레드가 가장 많은 확률로 블록을 생성 할 것이라고 생각했던 것과는 달리 75 스레드가 가장 많은 블록을 생성 함.
- 하지만 누적분포를 보면 90스레드가 먼저 1로 수렴함
(75 스레드 : 22,071 sec, 90 스레드 : 21,756 sec)
- 75 스레드가 90 스레드 보다 블록을 더 빠르게 생성했지만, 평균과 멀리 떨어진 블록이 90 스레드보다 자주 발생하여 누적분포에서 90스레드 보다 느리게 수렴함
- 실험에서 1500개의 블록을 채굴 했을 때 75 스레드가 더 낮은 표준 편차를 보였지만, 블록의 개수가 증가하면 90 스레드가 더 낮은 표준 편차를 가질 것 이라고 예상 됨.
- 난이도 0, 75 스레드
 - 평균 : 14.7145
 - 표준편차 : 14.0665
- 난이도 0, 90 스레드
 - 평균 : 14.5044
 - 표준편차 : 14.3967

Log distribution with regression

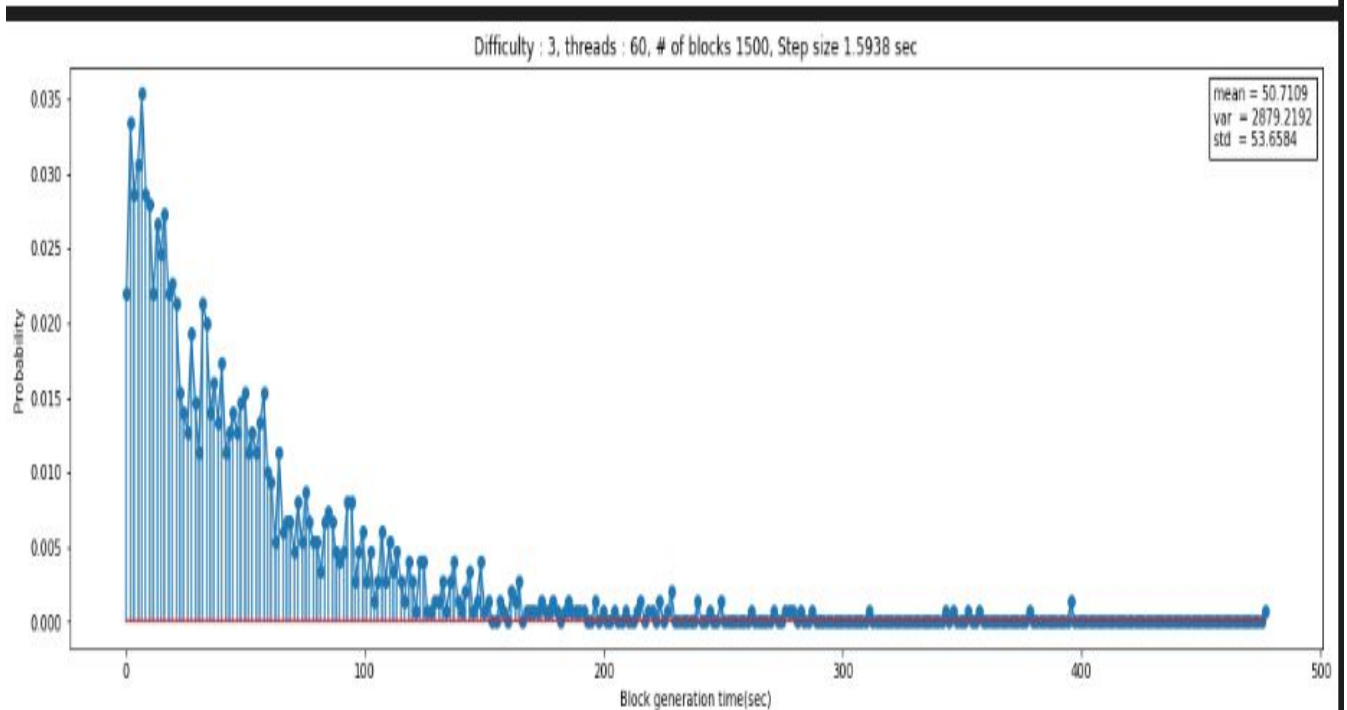
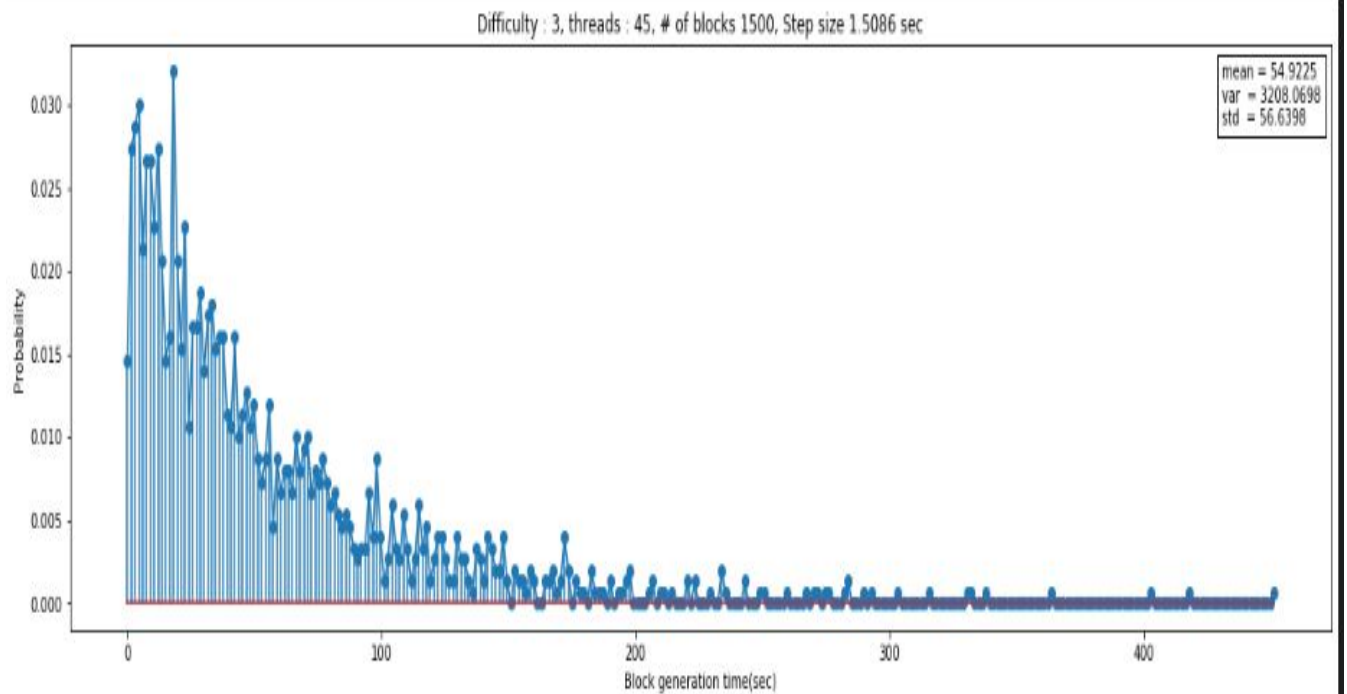
- 전체 시간의 N % 구간 까지 regression
- 스레드가 증가 할 수록 낮은 interval에서 계산한 mean과 실제 mean이 비슷해짐
- 즉, 스레드가 증가하면, 분산이 충분히 통제 될 것이라고 예상 됨.

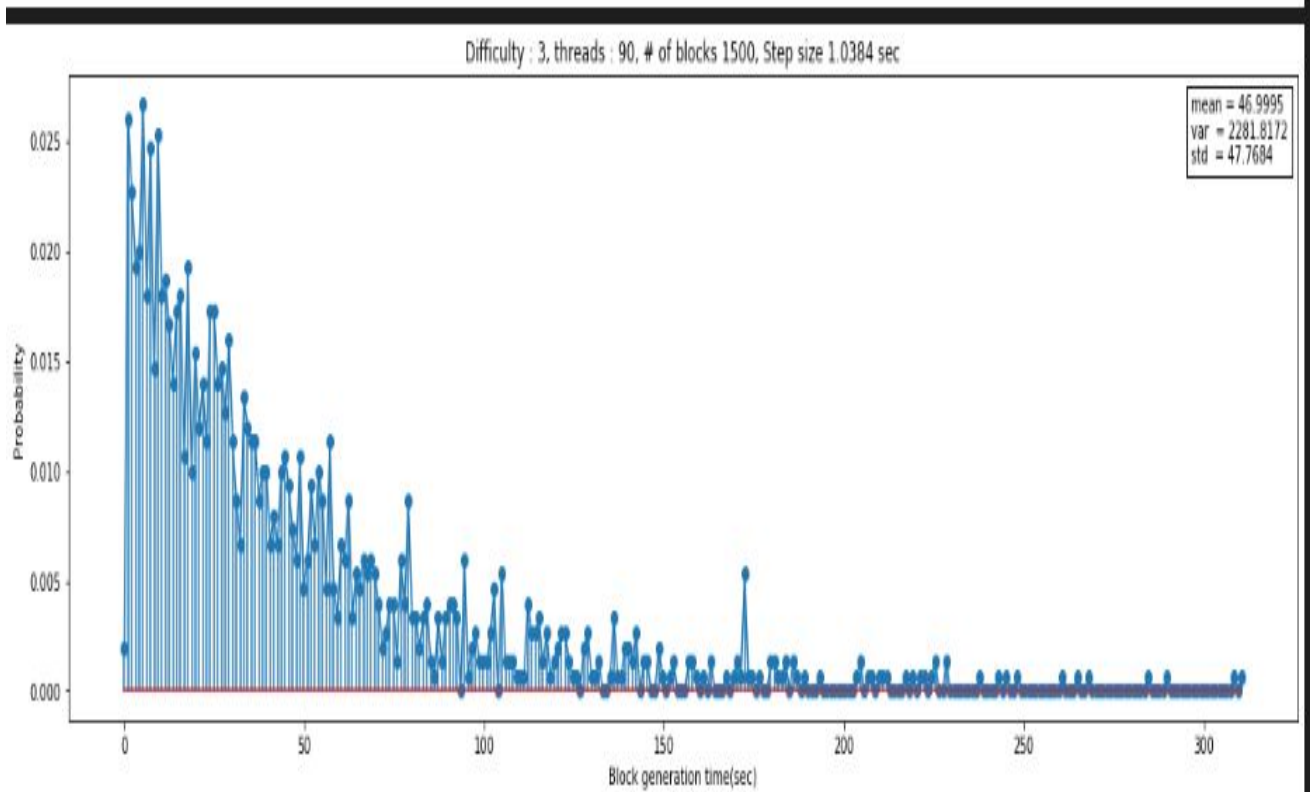
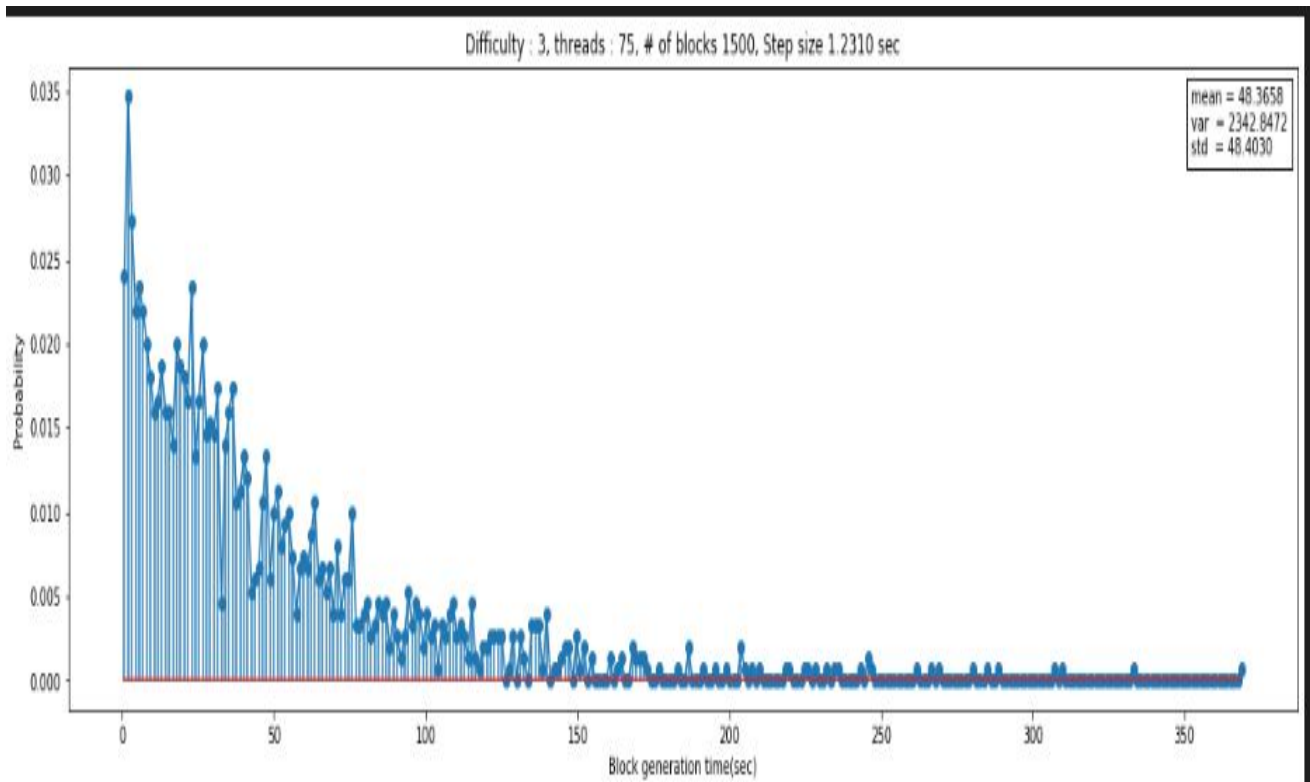




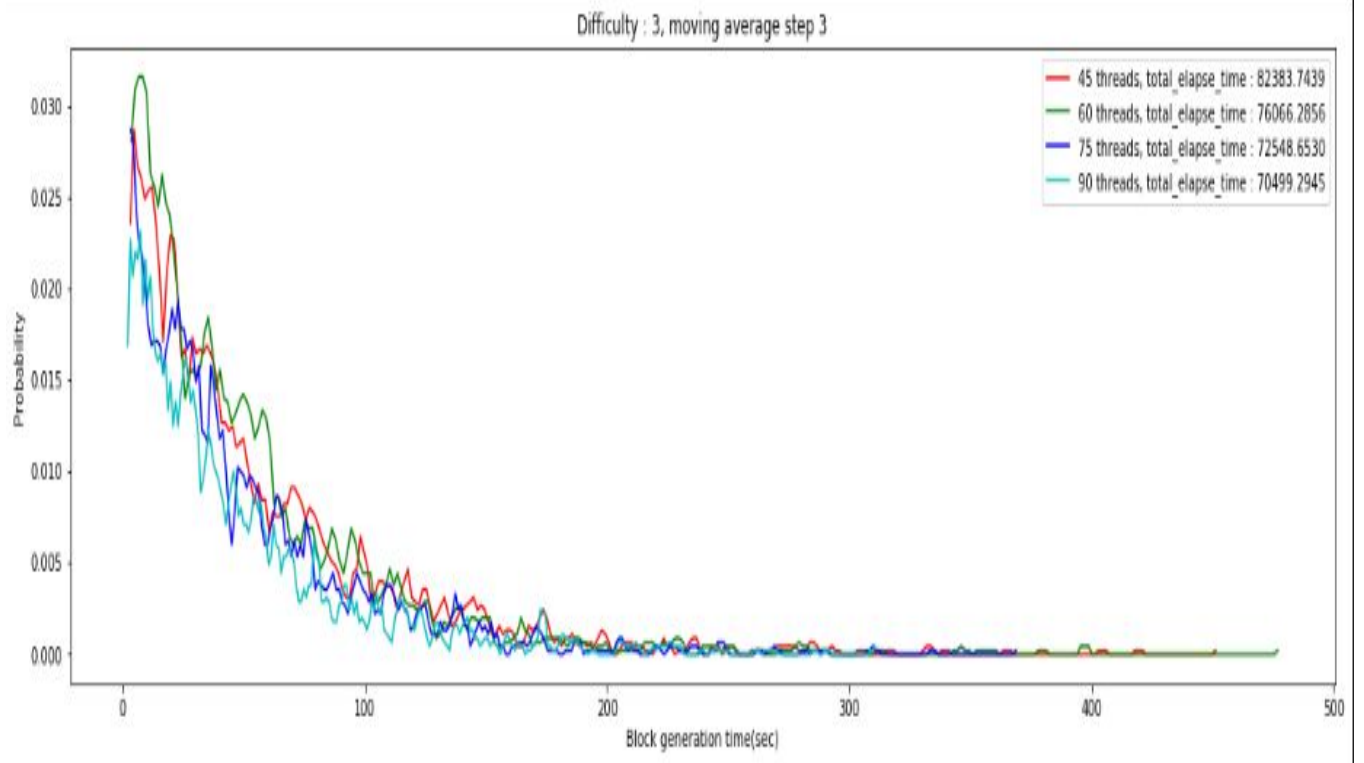
Difficulty 3

Probability distribution

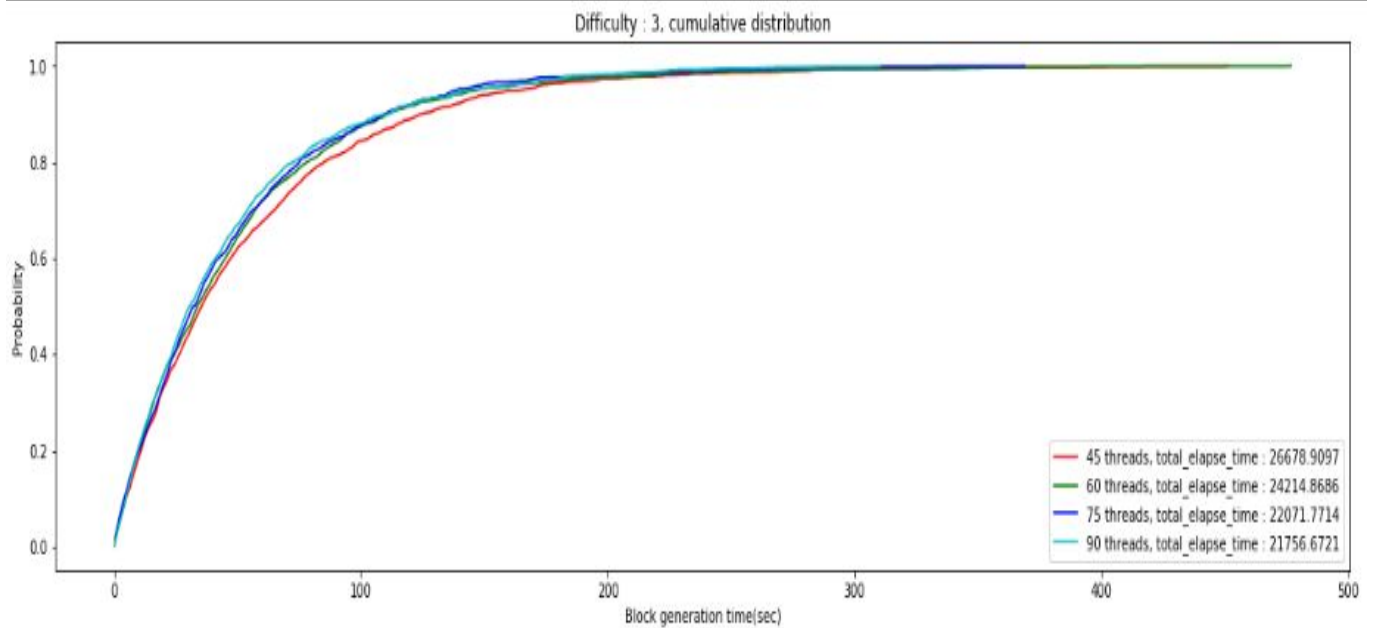




Moving average



Cumulative distribution



Log distribution with regression

