Skewness

1 R-MAT

Table 1: Graph Info

	G1		
Graph	|V|	|E|	Skew
G1	2^{20}	300|V|	3×10^8
G2	2^{20}	600|V|	6×10^8
G3	2^{20}	1000|V|	10^9

Table 2: G1/G2 (K = 64)

	G1			G2		
METHOD	RF	time/s	Mem/G	RF	time	Mem
HDRF	21.2	185	0.2	26.3	330	0.2
CLUGP	15.7	229	0.42	18.1	442	0.41
2PS-L	20.4	108	0.28	28.5	130	0.37
S5P	14.3	125	0.18	16.6	201	0.21

Table 3: G3 (K = 64)

	G1		
METHOD	RF	time/s	Mem/G
HDRF	30.7	429	0.24
CLUGP	19.6	577	0.43
2PS-L	32.4	151	0.38
S5P	12.01	267	0.24

2 Detail in R3O3

We can demonstrate our conclusion by proving that Equation (8), when compared to the corresponding expression on the right-hand side, is a monotonically decreasing function with respect to ρ. It can be found that $0 < \chi < 1$ because it represents the fraction of low-degree vertices. Thus, we can get:

$$0 < 1-\chi < 1-(\chi - \frac{i-1}{|V|}) < 1-(1-\chi+\frac{\chi|V|-1}{|V|}) < 1 \quad (1)$$

By the properties of the exponential function, we can conclude that the function decreases monotonically with an increase in ρ.