Concecutive Primes

Primes: 2 3 5 7 11 13 17 19 23 29 31 37 41 43 47 53 59 61 67 71 73

Increasing the number of primes did not change the maximum distribution much. Maximum distribution follows the pattern of high powers of smaller primes and rapidly drecreasing power for higher primes.
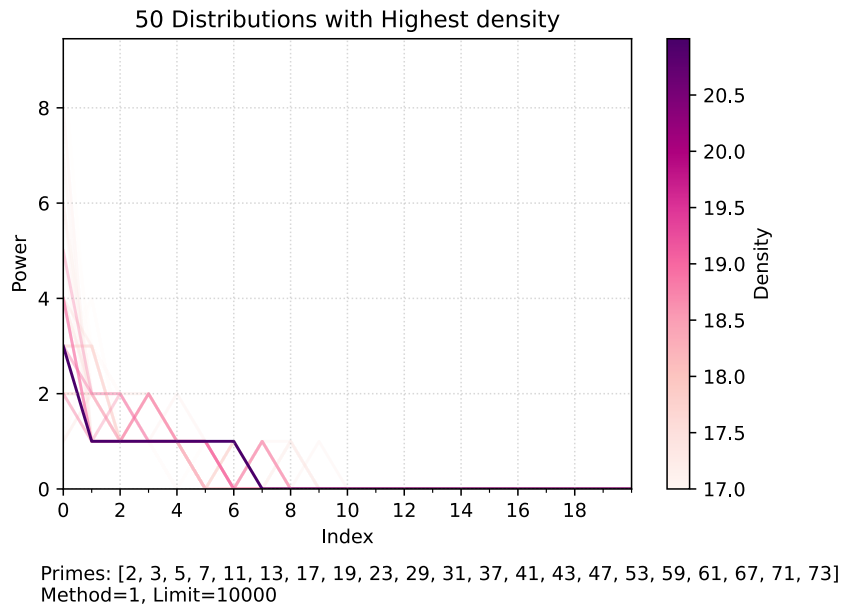

Primes: [2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73]
Method=1, Limit=10000

Figure 1: Limit 10^4, $20 \leq$ Magnitude < 21

```
Rank, Density, Distribution
0, 20.999980, 3 1 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1, 18.999980, 4 1 1 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2, 18.999980, 3 2 2 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3, 18.999980, 2 1 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4, 18.999980, 5 2 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[...]
27459, -36.941227, 0 0 0 0 0 0 0 0 2 0 0 0 0 1 0 0 0 0 0 0 0 1
27460, -37.430708, 0 0 0 0 1 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 0 1
27461, -37.782180, 0 0 0 0 1 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 1
27462, -38.127315, 0 0 0 0 1 0 0 0 0 0 0 0 0 2 0 0 0 0 0 0 1
27463, -39.093518, 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 2 0 0 1
```
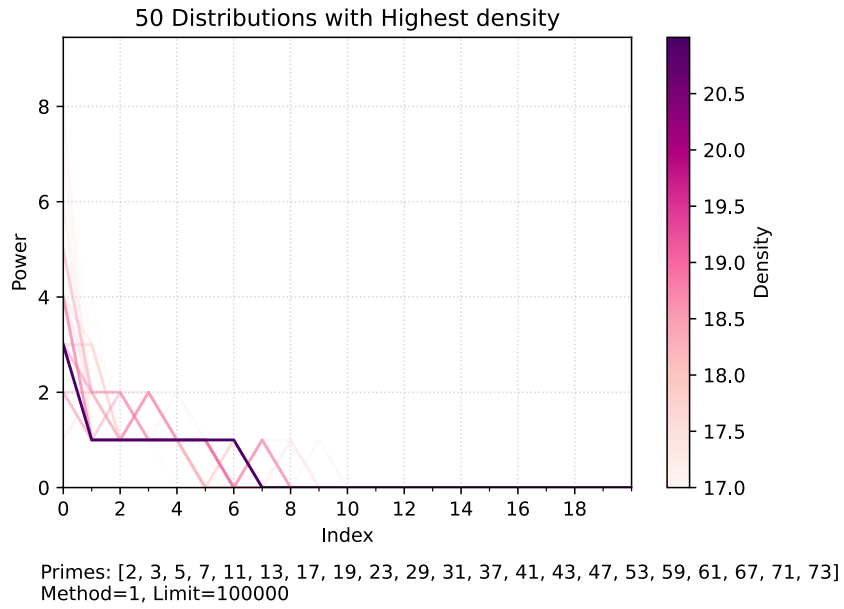
Primes: [2, 3, 5, 7, 11, 13, 17, 19, 23, 29, 31, 37, 41, 43, 47, 53, 59, 61, 67, 71, 73]
Method=1, Limit=100000

Figure 2: Limit 10^5, $20 \leq$ Magnitude < 21

```
Rank, Density, Distribution
0, 20.999980, 3 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1, 18.999980, 4 1 1 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2, 18.999980, 3 2 2 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3, 18.999980, 2 1 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4, 18.999980, 5 2 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[...]
27459, -42.750487, 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 2 0 0 0 0
27460, -43.005744, 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 2 0 0 0 0
27461, -43.092363, 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 1 0 1 0 0
27462, -43.189190, 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 1 0 0
27463, -43.312925, 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 1 0 0 0 1
```
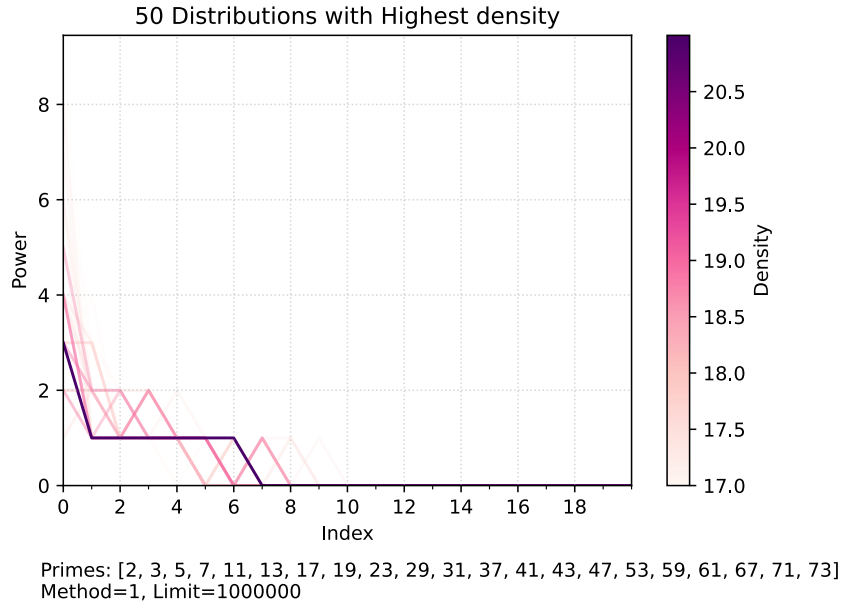
Figure 3: Limit 10^6, $20 \leq$ Magnitude < 21

```
Rank, Density, Distribution
0, 20.999980, 3 1 1 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1, 18.999980, 4 1 1 2 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2, 18.999980, 3 2 2 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3, 18.999980, 2 1 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
4, 18.999980, 5 2 1 1 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[...]
27459, -41.656755, 0 0 0 0 0 0 0 1 0 0 0 1 0 0 0 2 0 0 0 0 0
27460, -42.332554, 0 0 0 0 0 1 0 0 0 0 0 2 0 0 0 0 1 0 0 0 0
27461, -42.750487, 0 0 0 0 0 1 0 0 0 0 1 0 0 0 0 0 2 0 0 0 0
27462, -43.005744, 0 0 0 0 0 1 0 0 0 0 0 1 0 0 0 0 2 0 0 0 0
27463, -46.231116, 0 0 0 0 0 0 1 0 0 1 0 0 0 0 0 0 0 2 0 0 0
```

Concecutive Primes, but skipping every other prime

Primes: 2 5 11 17 23 31 41 47 59 67 73 83 97 103

General expeced battern still seems to holds, but the drecrease in power for larger primes is not as sharp as the previous.
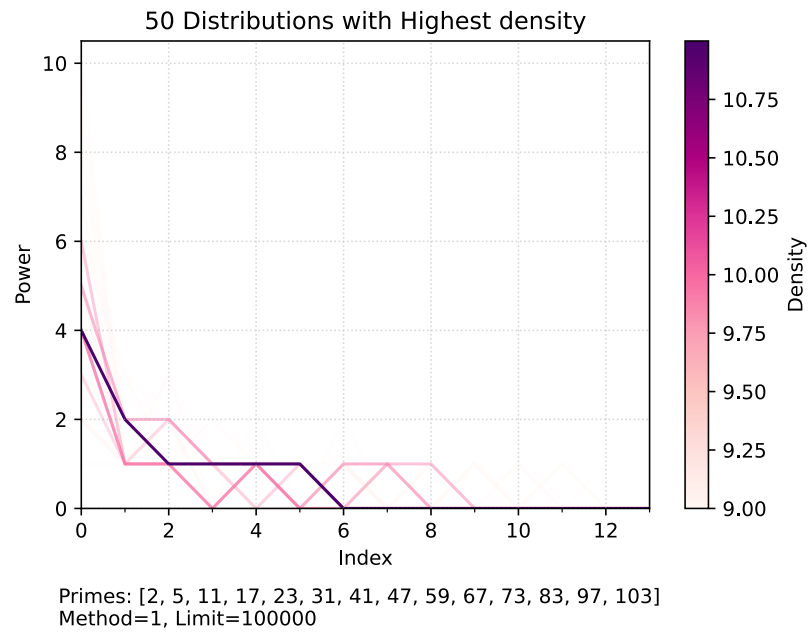

Primes: [2, 5, 11, 17, 23, 31, 41, 47, 59, 67, 73, 83, 97, 103]
Method=1, Limit=100000

Figure 4: Limit 10^5, $25 \leq$ Magnitude < 26

```
Rank, Density, Distribution
0, 10.999977, 4 2 1 1 1 1 0 0 0 0 0 0 0 0
1, 9.999980, 4 1 1 0 1 0 1 0 1 1 0 0 0 0 0 0
2, 9.999980, 4 1 1 0 1 0 0 1 1 0 0 0 0 0
3, 9.999979, 6 1 1 1 1 1 0 0 0 0 0 0 0 0
4, 9.999978, 5 2 2 1 1 0 0 0 0 0 0 0 0 0
[...]
7284, -40.601191, 0 0 2 3 0 0 0 0 0 0 0 0 0 1
7285, -42.684789, 0 0 1 2 0 0 0 0 0 0 0 0 0 2
7286, -42.718659, 0 0 2 0 0 0 0 1 0 0 1 0 0 1
7287, -43.215335, 0 0 2 0 0 0 0 1 0 0 0 0 0 2
7288, -47.213165, 0 0 0 3 0 0 0 0 0 1 0 0 0 1
```
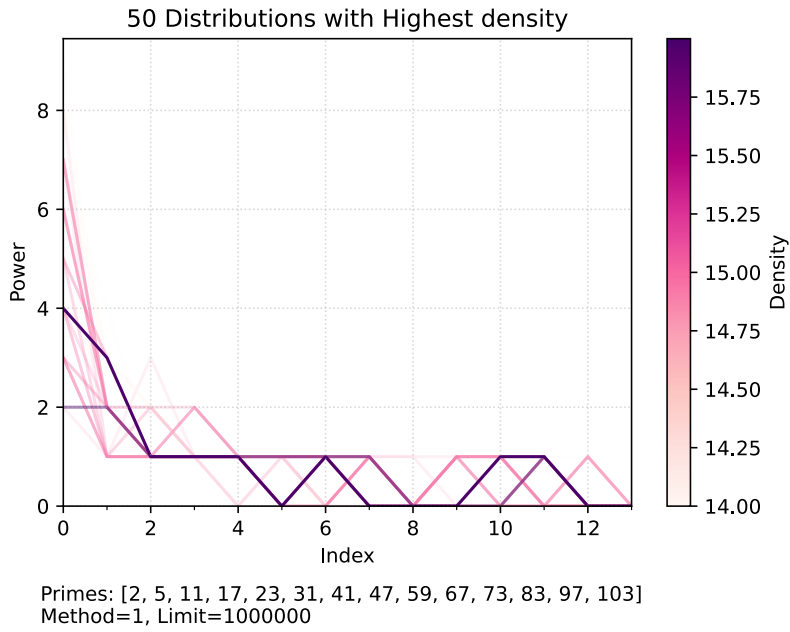
50 Distributions with Highest density

Primes: [2, 5, 11, 17, 23, 31, 41, 47, 59, 67, 73, 83, 97, 103]
Method=1, Limit=1000000

Figure 5: Limit 10^6, $40 \leq$ Magnitude < 41

```
Rank, Density, Distribution
0, 15.999961, 4 3 1 1 1 0 1 0 0 0 1 1 0 0
1, 15.999961, 2 2 1 1 1 1 1 1 0 0 0 1 0 0
2, 14.999973, 7 2 1 1 1 1 1 0 0 0 0 0 1 0
3, 14.999972, 6 2 1 1 1 0 0 1 0 1 1 0 0 0
4, 14.999971, 4 3 1 1 1 0 0 1 0 1 1 0 0 0
[...]
177243, -64.286176, 0 0 0 0 0 2 2 0 0 0 0 0 3 0
177244, -64.487246, 0 0 0 0 0 0 4 1 0 0 0 0 1 1
177245, -64.684283, 0 0 0 0 0 0 3 2 0 0 0 0 1 1
177246, -64.881320, 0 0 0 0 0 0 2 3 0 0 0 0 1 1
177247, -65.078357, 0 0 0 0 0 0 1 4 0 0 0 0 1 1
```

Larger Consecutive Primes

Primes: 89 97 101 103 107 109 113 127 131 137 139 149 151 157 163 167 173 179 181 191 193 197 199

Doesn't really follow the pattern of higher powers for smaller primes and lower powers for larger primes.
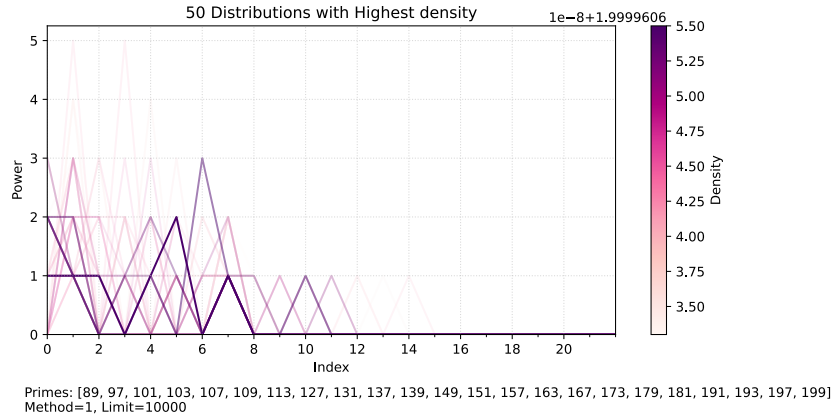

Figure 6: Limit 10^4, $46 \leq$ Magnitude < 47

```
Rank, Density, Distribution
0, 1.9999606550, 1 1 1 0 1 2 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
1, 1.9999606550, 2 1 0 0 0 0 3 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2, 1.9999606550, 2 2 0 0 1 0 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0
3, 1.9999606540, 1 1 0 1 2 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
4, 1.9999606540, 2 1 0 1 1 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[...]
47002, -62.2201123300, 1 2 0 1 0 0 1 0 0 0 0 0 1 0 0 0 0 0 0 1 0 0 0
47003, -62.2201133200, 1 0 0 0 0 3 2 0 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
47004, -62.2206679900, 1 0 2 0 0 0 2 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0 0
47005, -62.2209938000, 0 3 0 0 0 1 1 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0 0
47006, -62.2212938200, 1 1 0 1 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 1 0 0 0
```
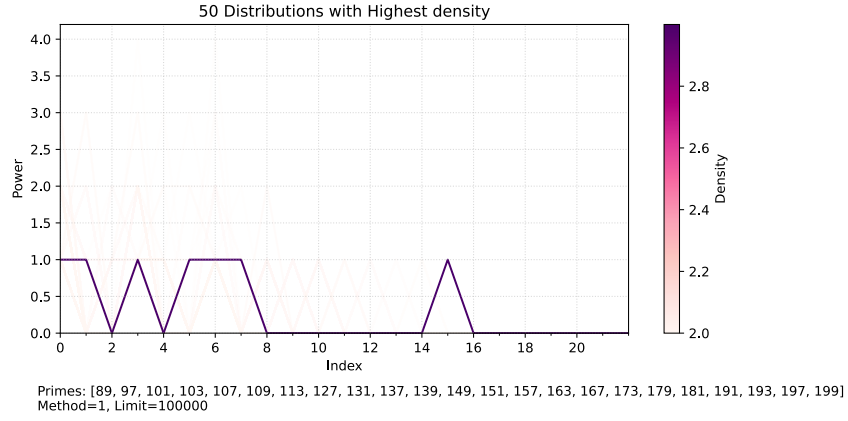
50 Distributions with Highest density

Primes: [89, 97, 101, 103, 107, 109, 113, 127, 131, 137, 139, 149, 151, 157, 163, 167, 173, 179, 181, 191, 193, 197, 199]
Method=1, Limit=100000

Figure 7: Limit 10^5, $46 \leq$ Magnitude < 47

```
Rank, Density, Distribution
0, 2.9999558690, 1 1 0 1 0 1 1 1 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0
1, 1.9999607280, 2 0 0 1 1 1 1 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0
2, 1.9999607280, 3 0 0 1 0 0 1 0 2 0 0 0 0 0 0 0 0 0 0 0 0 0 0
3, 1.9999607280, 1 3 0 1 0 0 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0
4, 1.9999607270, 1 0 0 1 2 2 1 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0
[...]
47002, -69.4479920800, 2 0 0 1 1 0 0 1 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0
47003, -69.4491332100, 0 2 0 1 2 0 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0
47004, -69.4500122100, 1 0 2 2 0 0 0 0 0 0 0 1 0 0 0 0 0 0 0 1 0 0
47005, -69.4508936800, 0 1 2 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 1 0 0
47006, -69.4513957700, 0 2 1 1 1 0 0 0 0 1 0 0 0 0 0 0 0 0 0 0 1 0 0
```