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The Density Plot of the Prime Gaps is a Fractal

2016-09-23 BY GENE

As you look at the density plots of increasing numbers of [prime gaps](#) (the distance between subsequent primes), a fractal emerges.

Just get the gaps and graph the densities with this simple [R](#) code:

```
library(primes)

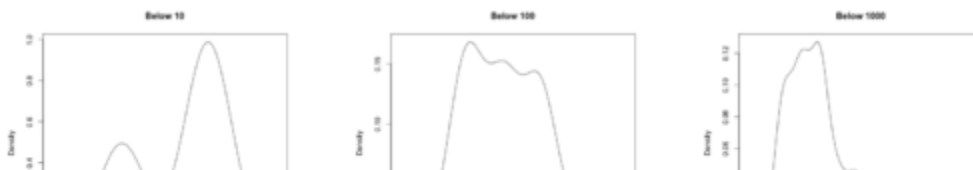
max <- 100

p <- generate_primes( min = 0, max )

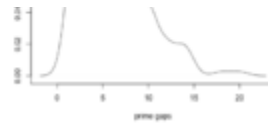
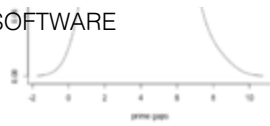
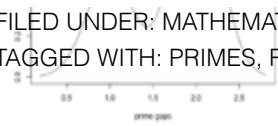
gaps <- p[ 2 : length(p) ] - p[ 1 : length(p) - 1 ]

plot( density(gaps), xlab = 'prime gaps', main = 'Below 100' )
```

For increasing numbers of gaps (shown to 100_000_000), this results in the following graphs. You can see the self-similar, fractal nature emerge:



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