

## MEMO

**TITLE** Python / TeX Introduction  
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## 1 My first PyTeX section

Something very technical goes here

We can even have some fancy math!

This is the dispersion relation:

$$\omega^2 = gk \tanh(kh)$$

where,

$$\omega = \frac{2\pi}{T} = \frac{2 \cdot 3.14}{10} = 0.63$$
$$k = \frac{2\pi}{L}$$

Now lets solve it for wave number  $k$  with  $g = 9.81 \text{ m/s}^2$  and  $h = 5 \text{ m}$ :

$$0.63^2 = 9.81 \cdot k \cdot \tanh(k \cdot 5)$$

Python finds the solution with the iterative Newton-Rhapson method, which gives us:

$$k = 0.09$$

which, in turn, gives us wave length:

$$L = \frac{2\pi}{k} = \frac{2 \cdot 3.14}{0.09} = 67.67 \text{ m}$$

We can also have figures automatically generated!

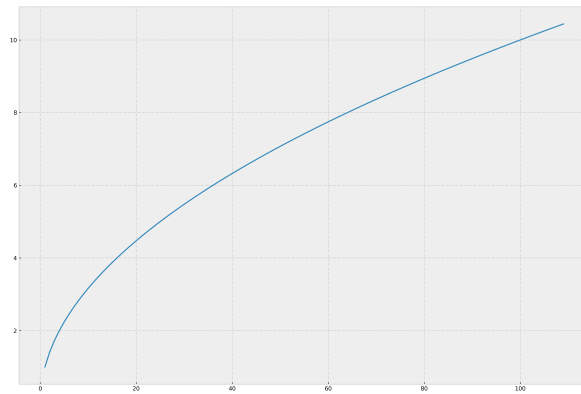


Figure 1: Square root plot

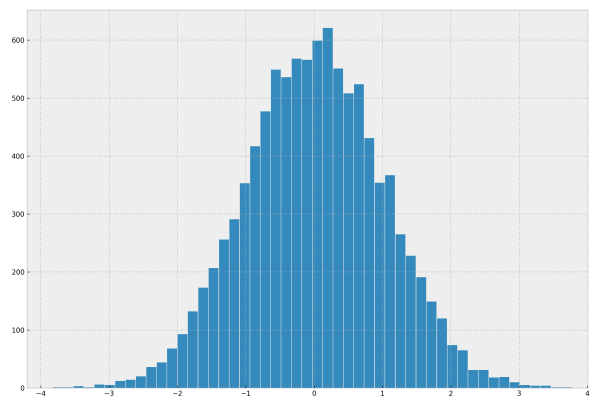


Figure 2: 10000 normally distributed random values histogram plot