

# Rotate interactively a 3D plot in python - matplotlib - Jupyter Notebook

Asked 4 years, 3 months ago   Modified 3 years, 1 month ago   Viewed 47k times

15 I was wondering how it is possible to interactively rotate a 3D plot as described in [this](#) video (if you decide from above or underneath or from right or left). I can generated a 3D plot in spyder or in a jupyter Notebook but after that it remains static and I cannot interact with it and rotate/change the angle of the viewpoint.

Here is the code:

1



```
from mpl_toolkits.mplot3d import Axes3D
import matplotlib.pyplot as plt
from matplotlib import cm
from matplotlib.ticker import LinearLocator, FormatStrFormatter
import numpy as np

fig = plt.figure()
ax = fig.gca(projection='3d')

scale = 8
# Make data.
X = np.arange(-scale, scale, 0.25)
Y = np.arange(-scale, scale, 0.25)
X, Y = np.meshgrid(X, Y)
Z = X**2 + Y**2

# Plot the surface.
surf = ax.plot_surface(X, Y, Z, cmap=cm.coolwarm,
                      linewidth=0, antialiased=False)

# Customize the z axis.
ax.set_zlim(0, 100)
ax.zaxis.set_major_locator(LinearLocator(10))
ax.zaxis.set_major_formatter(FormatStrFormatter('%.02f'))

# rotate the axes and update
for angle in range(0, 360):
    ax.view_init(30, 40)

# Add a color bar which maps values to colors.
fig.colorbar(surf, shrink=0.5, aspect=5)

plt.show()
```

Thank you very much in advance!

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- 1 You need to use an interactive backend. By default Jupyter as well as the IPython console in Spyder use the inline backend, which basically shows a png image of the plot - png images are not interactive. – [ImportanceOfBeingErnest](#) Apr 23, 2018 at 12:52

Many thanks @ImportanceOfBeingErnest. Do you have any materials (tutorial, website) about how do I do that exactly? – [ecjb](#) Apr 23, 2018 at 12:56

Don't know about matplotlib but for interactive plotting I can recommend `pyqtgraph` which is using the Qt library for plotting and is lightningly fast. – [Alfe](#) Apr 23, 2018 at 12:56

@ecjb Search for something like "interactive matplotlib jupyter" or so. – [ImportanceOfBeingErnest](#) Apr 23, 2018 at 13:02

@ImportanceOfBeingErnest Oh yes it can. Have a look at [youtu.be/vSbyDoXgAJI?t=4m32s](https://youtu.be/vSbyDoXgAJI?t=4m32s). – [Alfe](#) Apr 23, 2018 at 13:21

1 Answer

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Ok I found the answer on another post:

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[How can I open the interactive Matplotlib window in IPython notebook?](#).



the following line `%matplotlib qt` has to be written at the beginning of the script + you have to restart the jupyter notebook and it works



Many thanks for your help guys!



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edited Oct 16, 2018 at 12:11

answered Apr 23, 2018 at 13:19

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Instead of restarting it, importing matplotlib again might work. – [user202729](#) Jan 29, 2021 at 5:11

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