

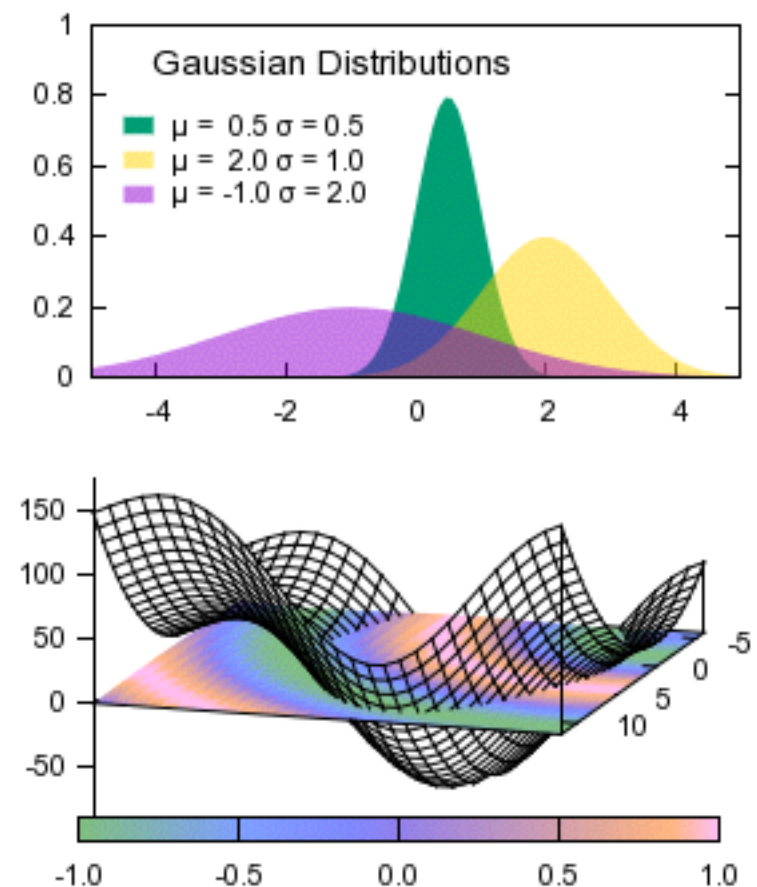
gnuplot

Carlo Mancini

carlo.mancini-terracciano@roma1.infn.it

gnuplot

- gnuplot is a command line program to make plots (and not just plots)
- it's open source
- completely free
- <http://www.gnuplot.info>



How to install gnuplot

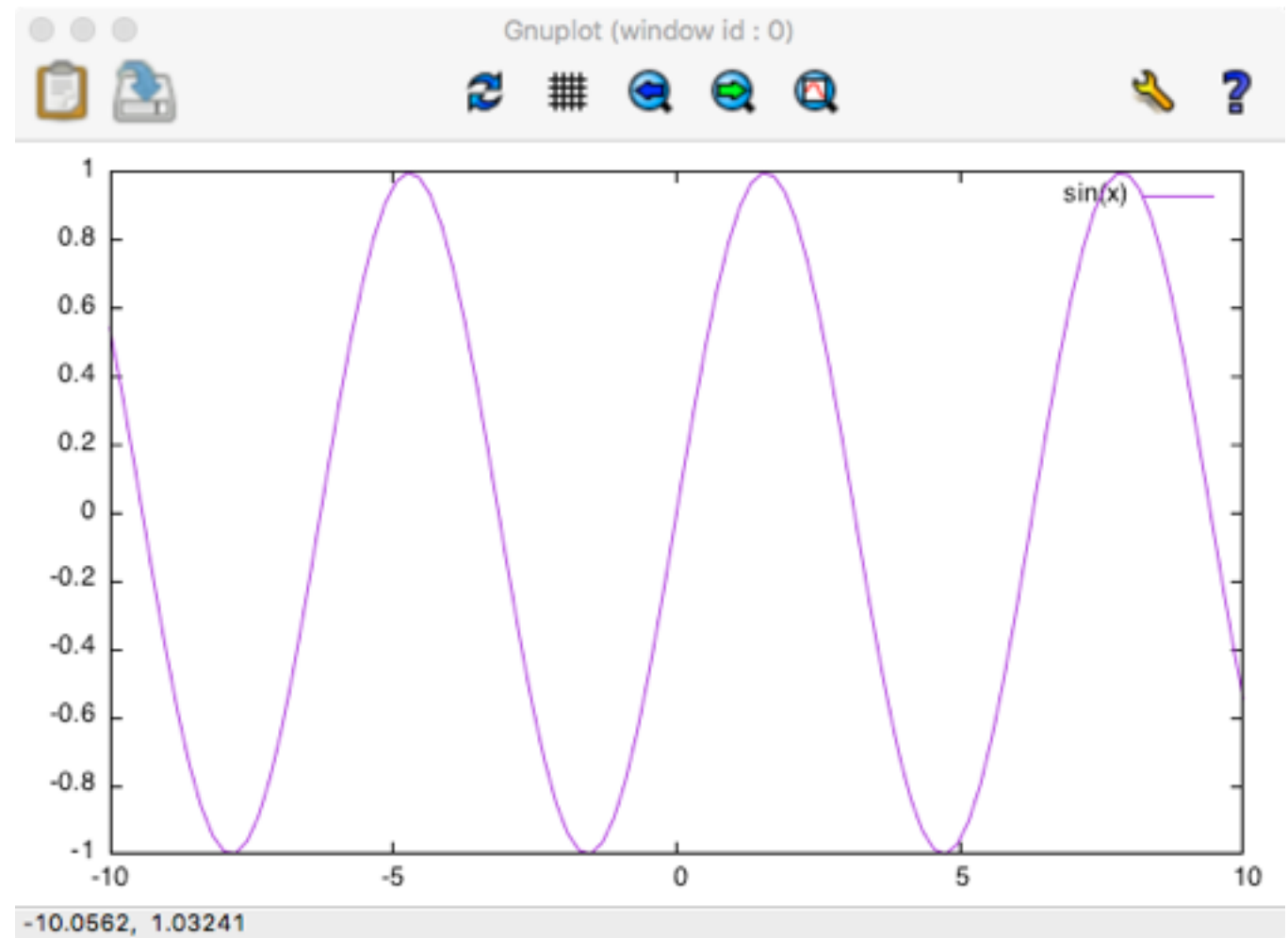
- On linux with apt (debian, ubuntu...):
sudo apt-get update
sudo apt-get install gnuplot wxt
- On linux with yum (fedora, RedHat...):
sudo yum update
sudo yum install gnuplot
- On a Mac:
ruby -e "\$(curl -fsSL https://raw.githubusercontent.com/Homebrew/install/master/install)"
brew doctor
brew update
brew tap homebrew/science
install aqua term (from: <http://sourceforge.net/projects/aquaterm/>)
brew install gnuplot --with-aquaterm -qt -wx

Essential commands

- you can exit typing q
- help: h

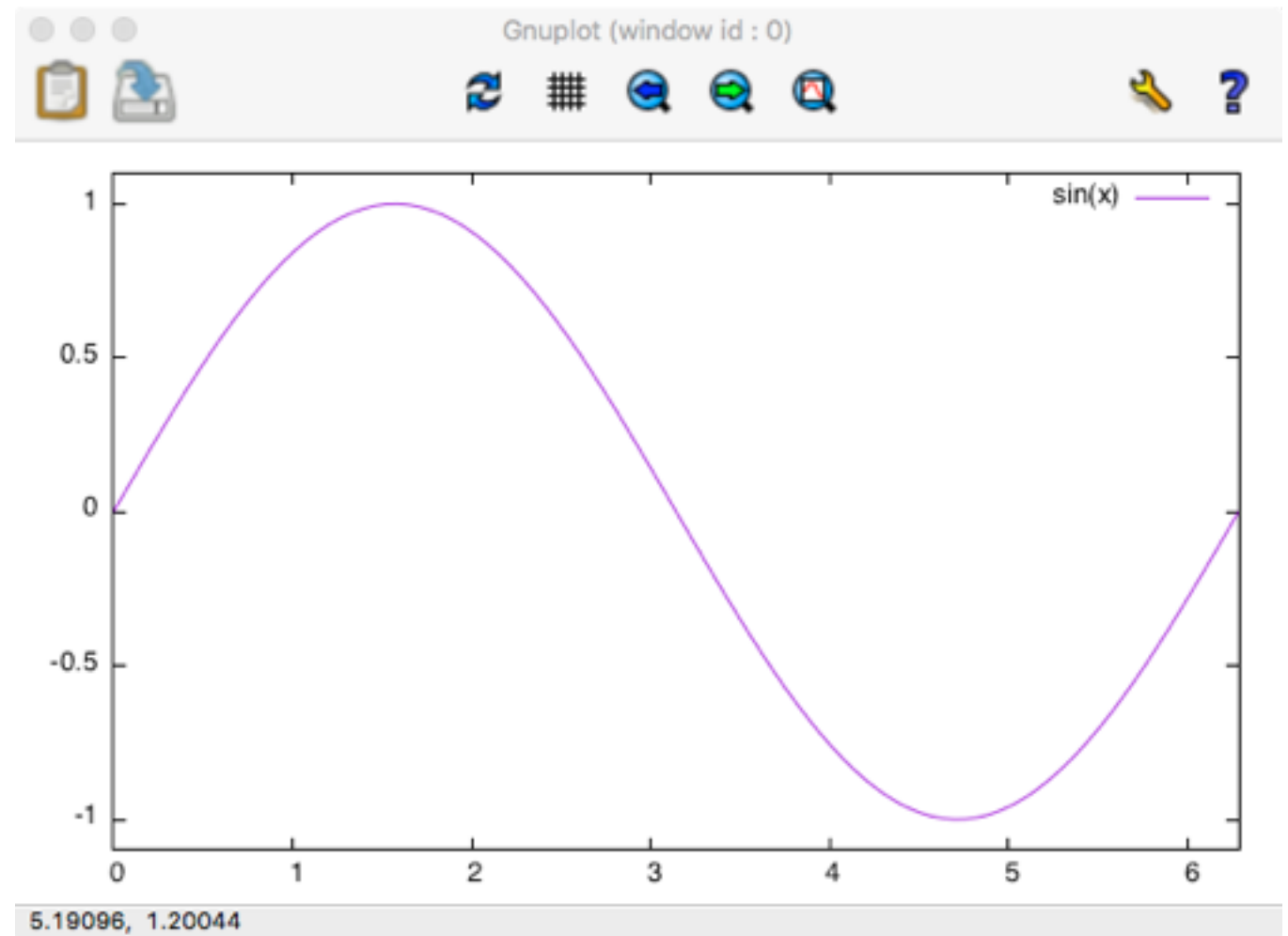
Plot of a function

- Se the terminal “terminale”
set term wxt
- Plot a function
plot sin(x)



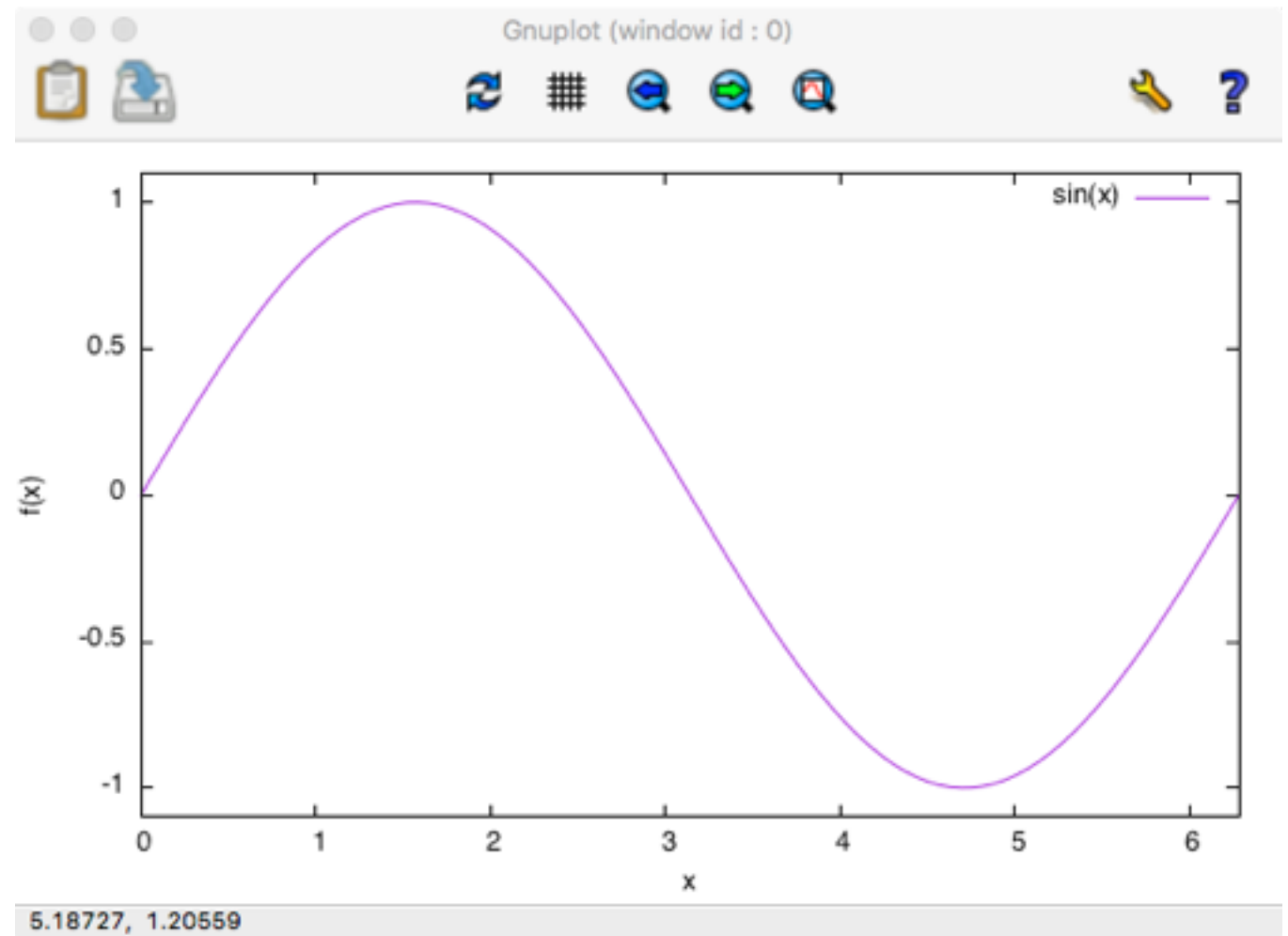
Set the axis

- Set the x range
`set xrange [0:2*pi]`
- and on y
`set yrange [-1.1:1.1]`
- redo the plot
`replot`



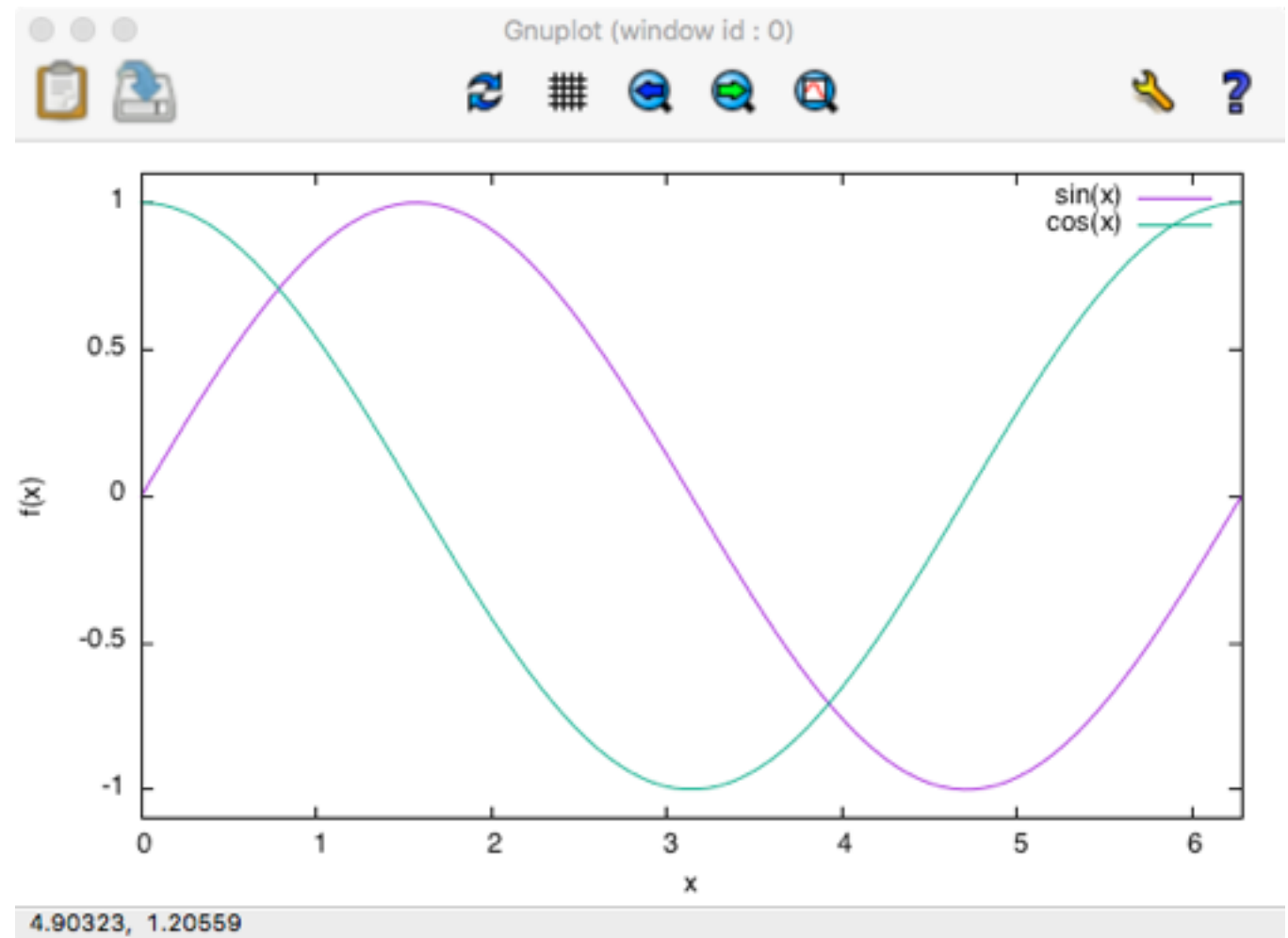
Axis labels

- Label x axis
set xlabel "x"
- and y
set ylabel "f(x)"
- redo the plot
replot



Two functions

plot sin(x), cos(x)

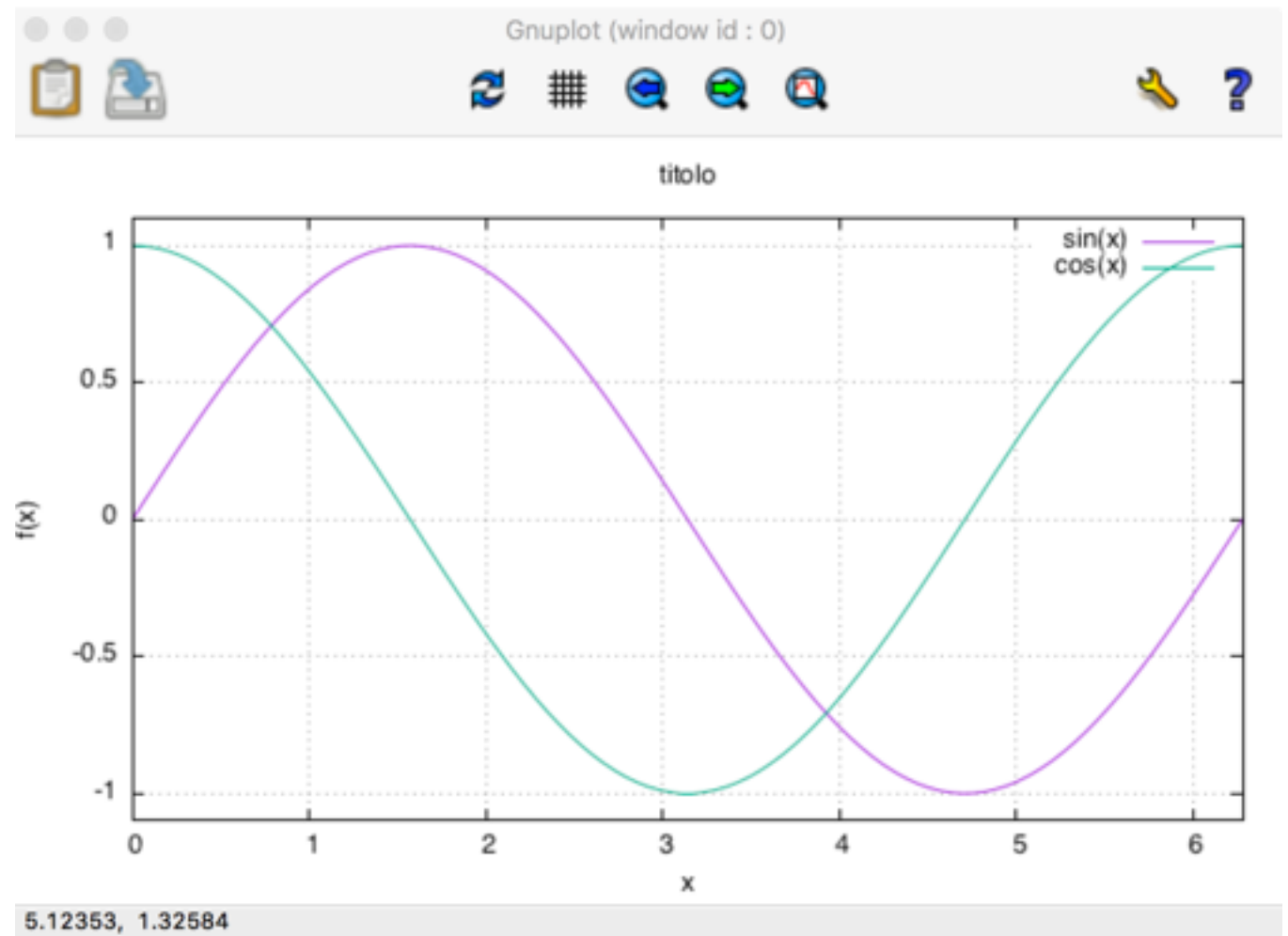


Two functions

plot sin(x), cos(x)

set grid

set title 'the title'



Functions of two vars

reset

set term wxt

set xrange [0:2*pi]

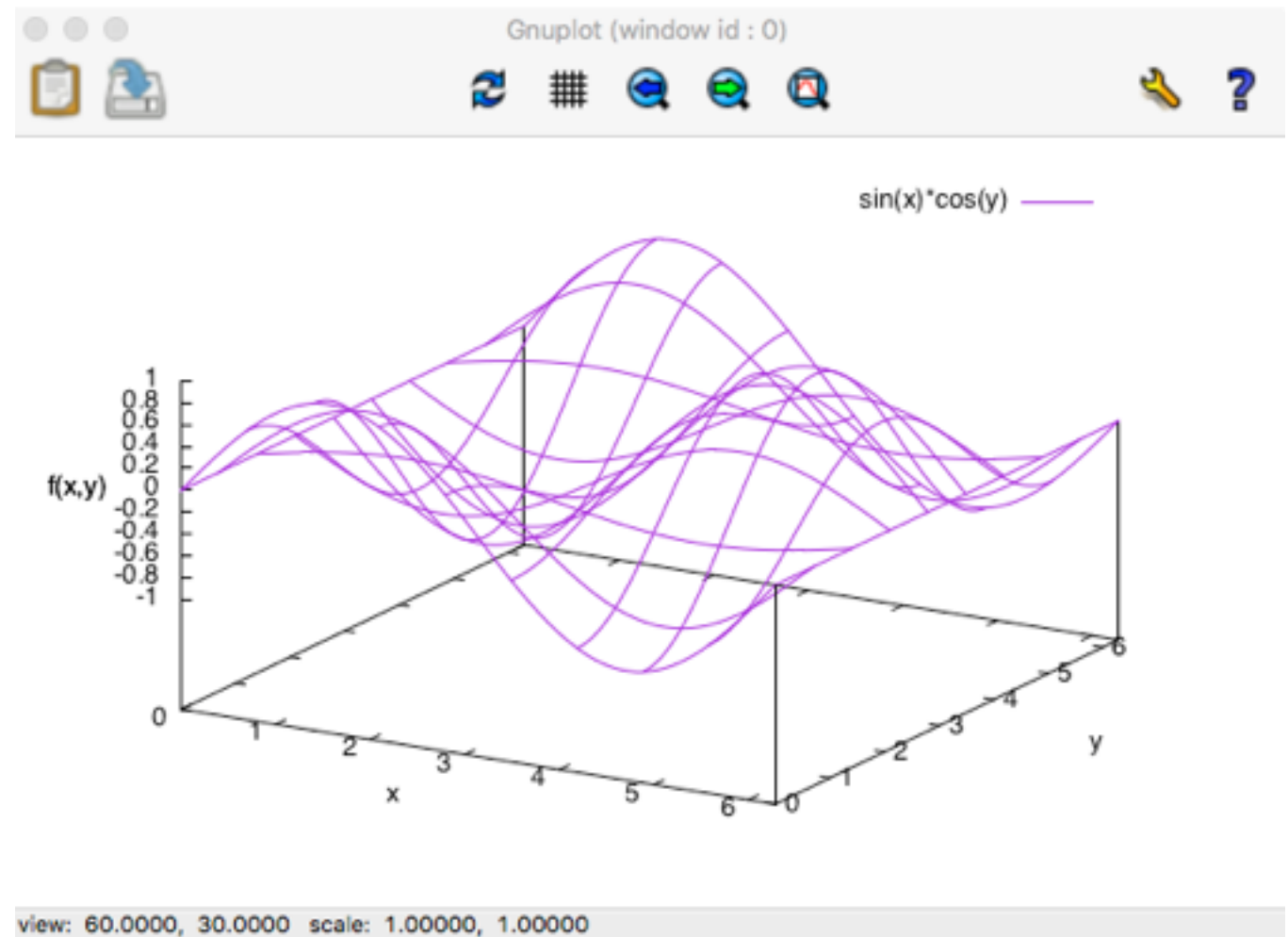
set yrange [0:2*pi]

set xlabel "x"

set ylabel "y"

set zlabel "f(x,y)"

plot sin(x)*cos(y)



Functions of two vars

reset

set term wxt

set xrange [0:2*pi]

set yrange [0:2*pi]

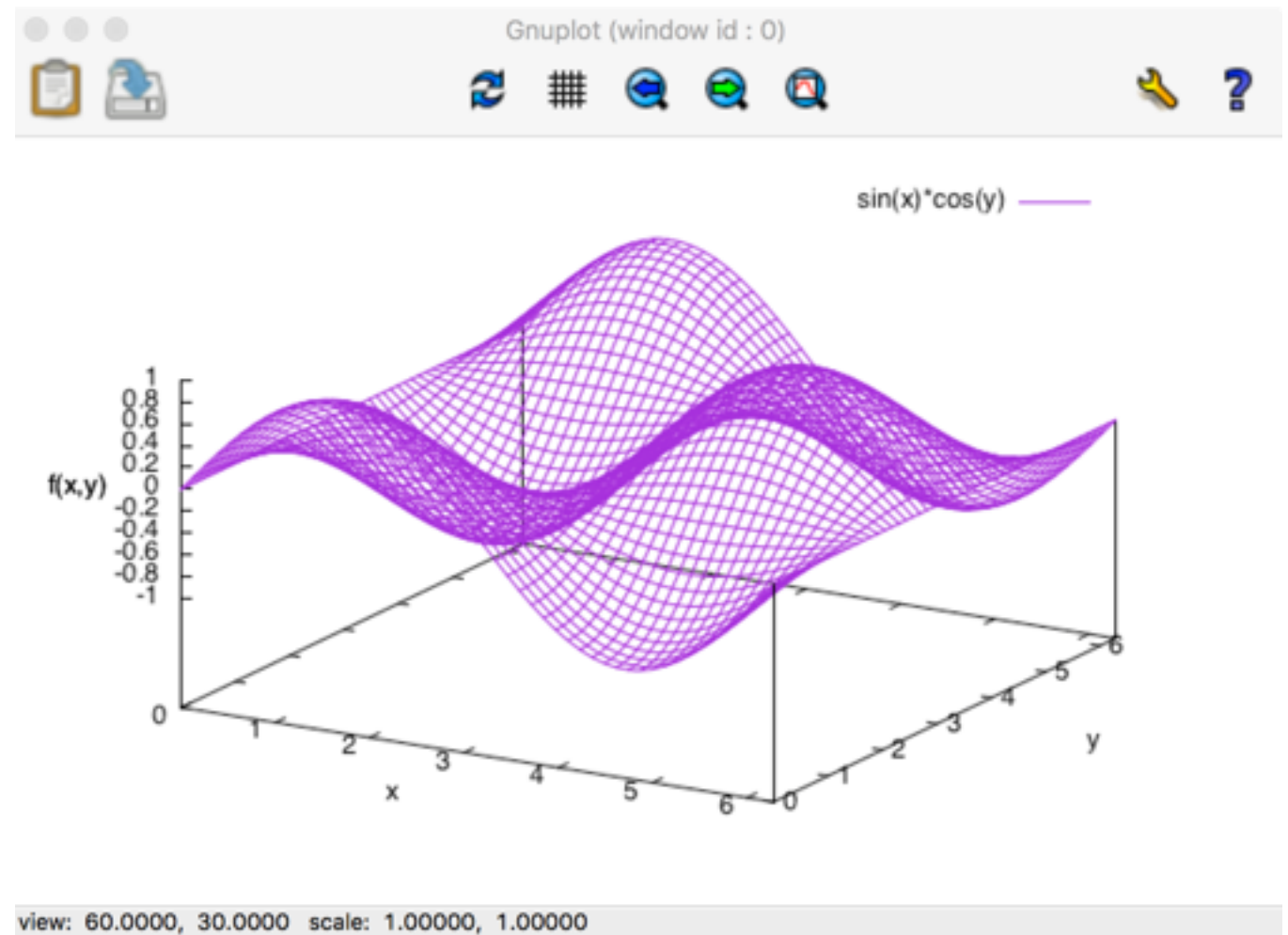
set xlabel "x"

set ylabel "y"

set zlabel "f(x,y)"

set isosamples 50

splot sin(x)*cos(y)



Scripting

- It is possible to write all the commands in a txt file (for example plot2D.gp)
- Load the script
`load 'plot2D.gp'`

Plot of a data file

```
reset
```

```
set term wxt
```

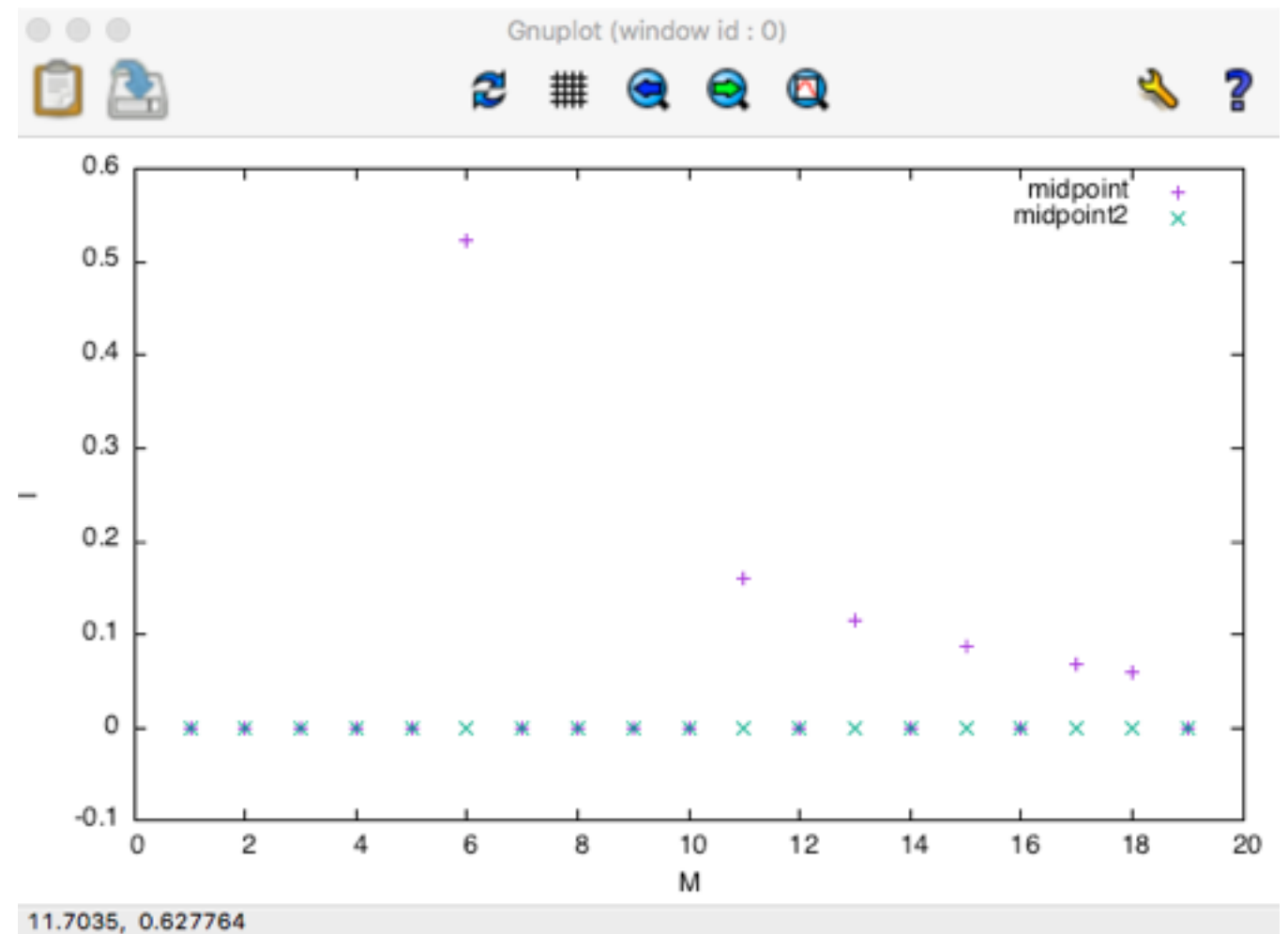
```
fname='dati2.txt'
```

```
set yrange [-0.1:0.6]
```

```
set xlabel "M"
```

```
set ylabel "I"
```

```
plot fname using 1:2 title 'midpoint', \  
fname using 1:3 title 'midpoint2'
```



Save to file

```
set term eps
```

```
set output "plot.eps"
```

```
replot
```