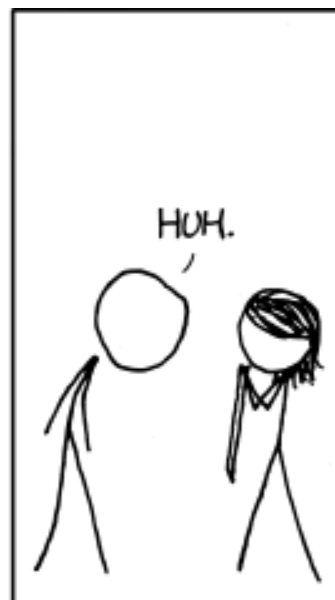
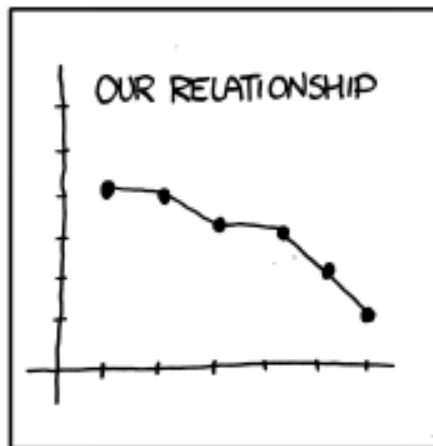


Thousand words



Why does it matter?

- You can better understand your data.
- The point of your work can reach more people.
- Your work looks more professional.

A FEW RULES...

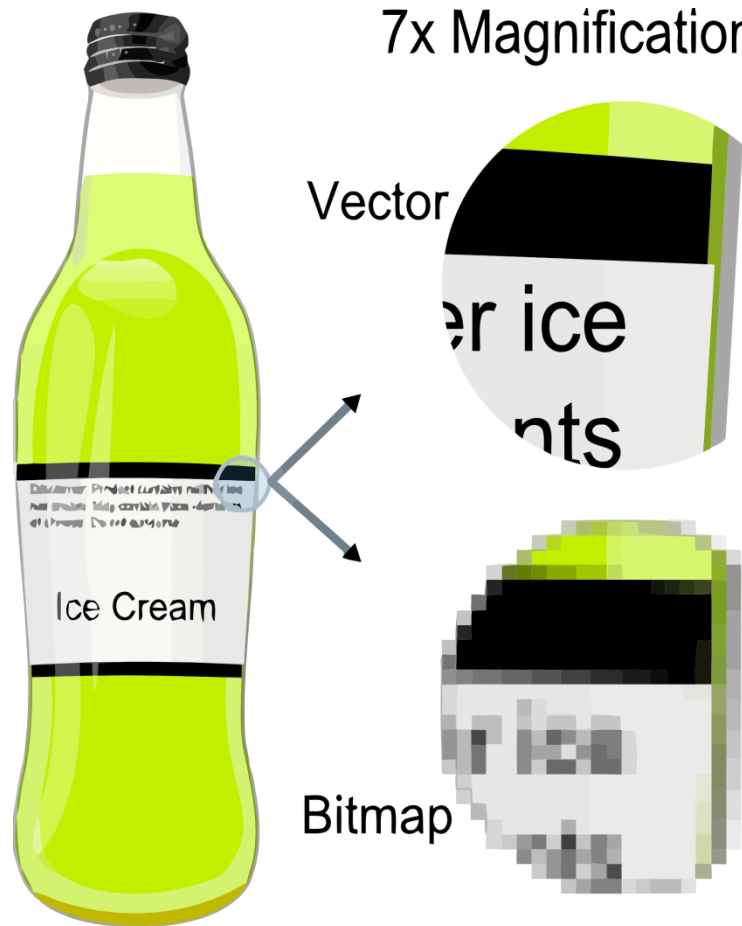
Rule 1

Whenever you are saving any figures do it in vector format.

Vector?

$A = (1, 4, 2) ?$

Vector vs. Bitmap



Vector graphic formats

- PS
- EPS
- PDF
- SVG

Both MATLAB and Matplotlib can save figures in eps and pdf. Take advantage of this.

Rule II

Automatically generate your figures.

Code separation

Simulations and/or data
processing



Saving results



Figures and reports
generation

Back up your code and figures often

The most important part of your process is your code. It will allow you to recreate the results and figures.

Think of figures as of results in a concise form. Facing disaster and limited time they will allow you to make this crucial poster on time.

Back up your code and figures often

Figures can be put into a version control system together with your code. This way you would be able to get a snapshot of the code and the results from the past.

Rule III

When you are generating figures just for yourself try to make them as close to publishing quality as possible.*

* within a reason

Publishing quality?

- Label axes and units.
- Add a legend.
- Use sensible colours.
- Less is more (don't make the figures too crowded).

...but don't spend ages trying to do this.

Why?

Right now you totally know what is on the figure
but in two years* you will probably forget.

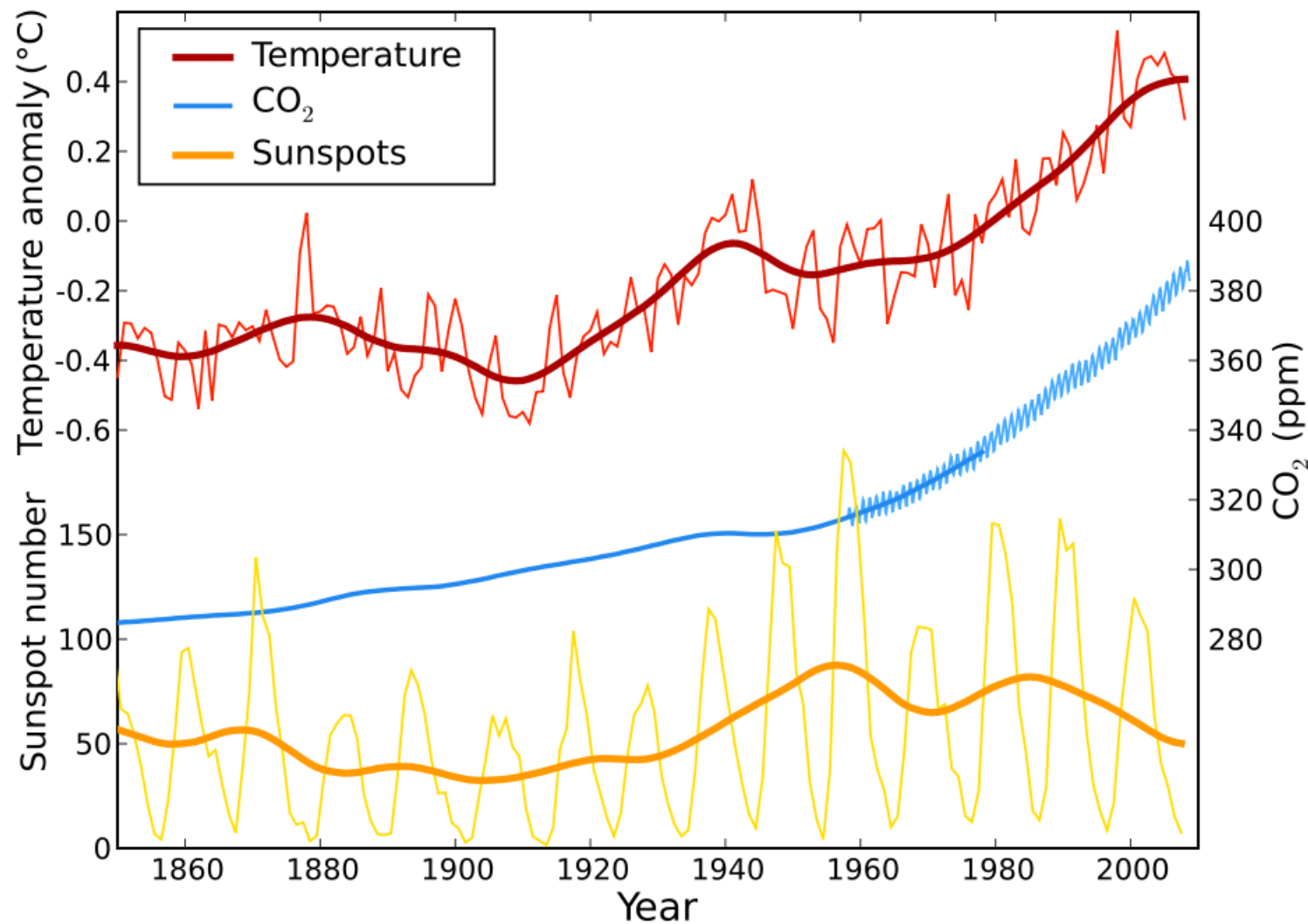
* or whenever your funding will run out
and you'll decide to start writing up

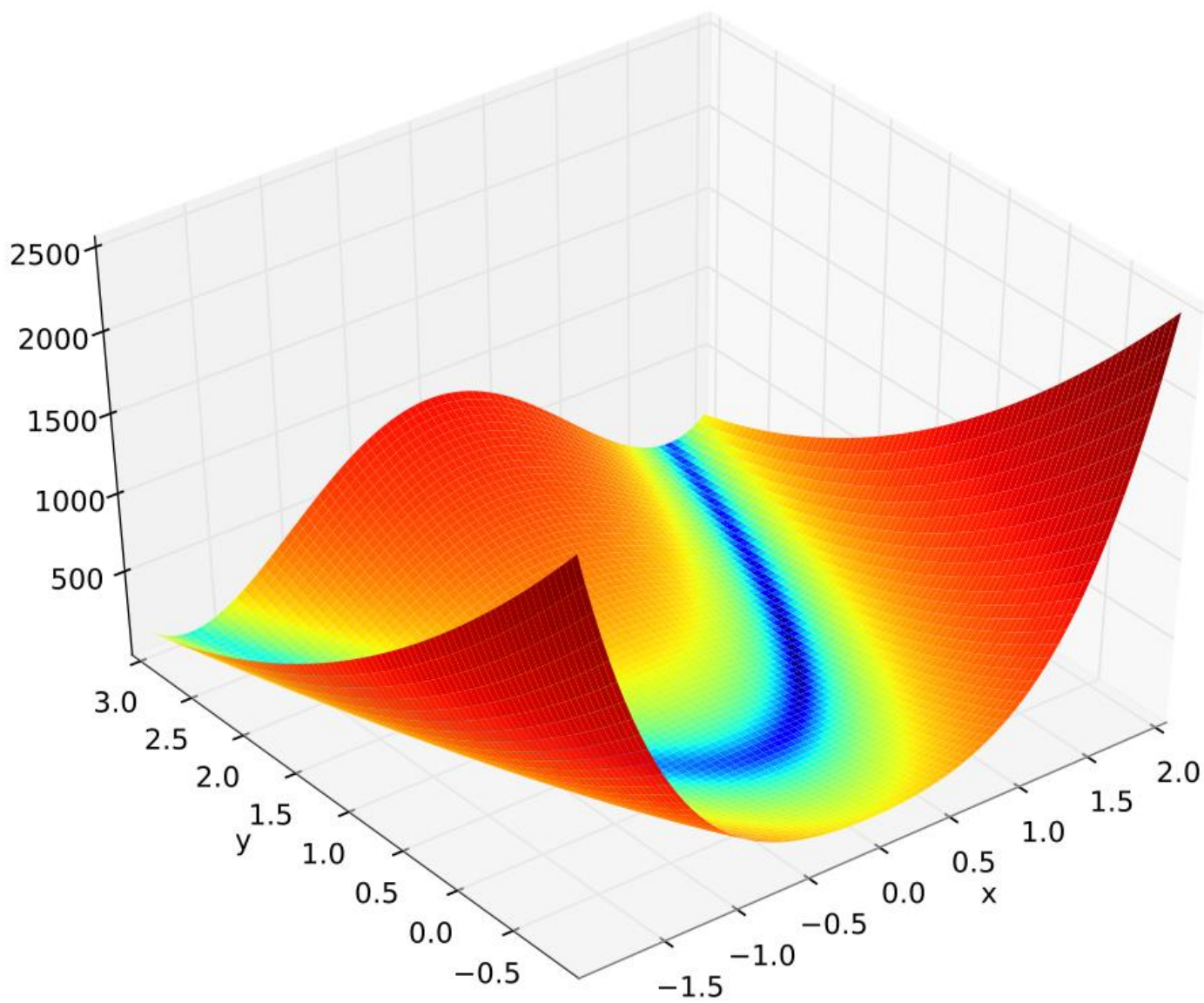
TOOLS OF THE TRADE

Matplotlib

- Python based.
- With built-in layout manager.
- On top of eps, ps can also create svg.
- Simple 3D support.
- You can embed it into your application.

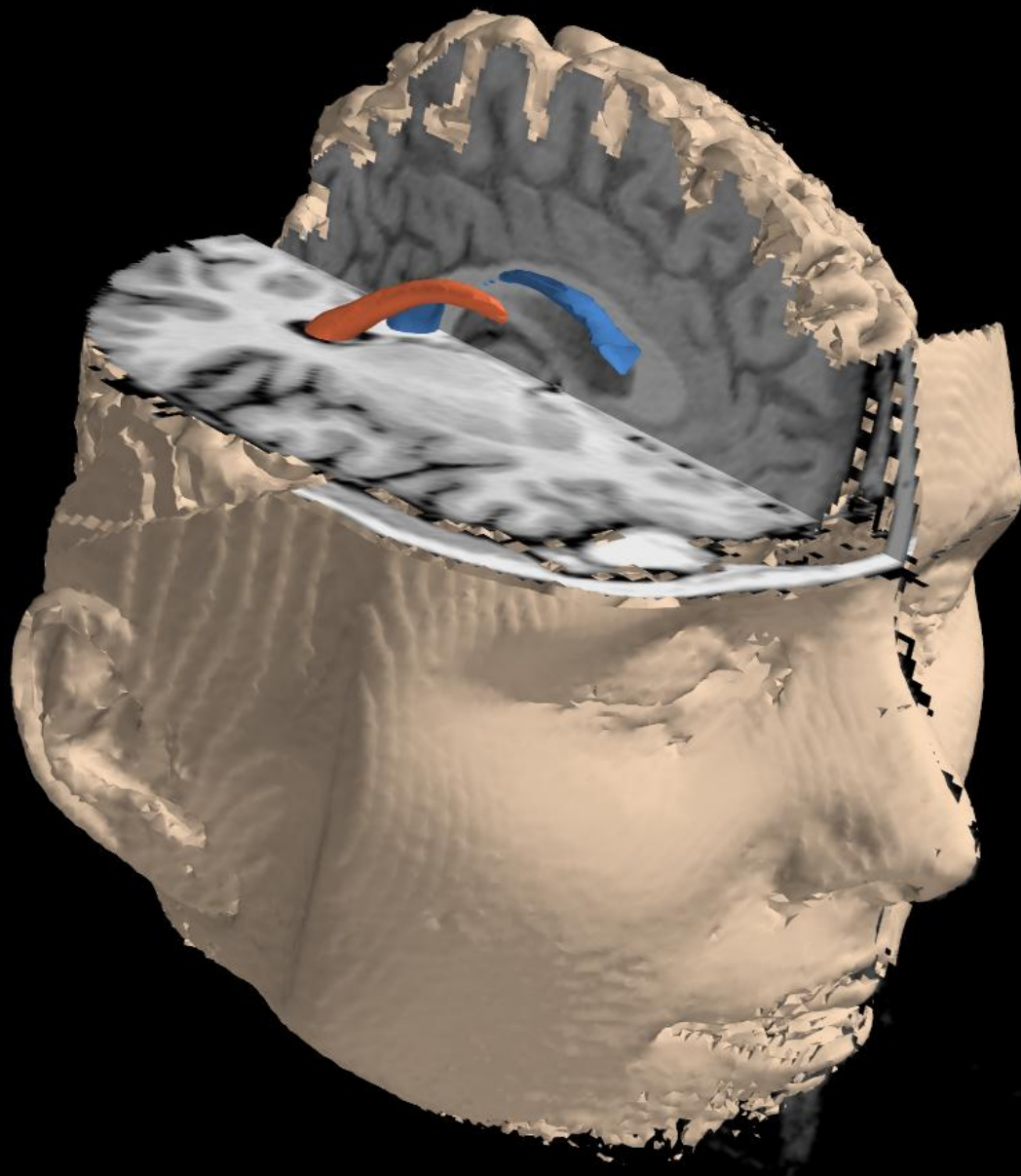
Temperature, CO₂, and Sunspots





Mayavi2

- Powerful framework for generating and interacting with 3D visualisations.
- Compatible with Python.
- Has a good interactive editor.



Inkscape

- Is a vector graphic editor.
- Good for creating diagrams and correcting your graphs.

Demonstration

Conversion

- Bitmap
 - convert (part of ImageMagick)
- Vector
 - ps2pdf, pdf2ps
 - inkscape

Bitmaps are evil but...

- Sometimes you just have to use them.
- What then? How should you generate or convert your figures?

Bitmaps

Step One:

Think how big your figure should be in
the real world.*

* The thing you can read about on bbc.co.uk

Bitmaps

Step Two:

Check what is the resolution your figure is going to be printed with. In doubt assume it is 300 Dots Per Inch (DPI).

Bitmaps

Step Three:

Calculate the size that you need to generate
your figures:

$$\langle \text{real size} \rangle \times \langle \text{DPI} \rangle = \langle \text{pixel size} \rangle$$

Would you attend a matplotlib
tutorial?

<http://doodle.com/gb9cvuxvmztw9q5b>