

# *Authorship Criteria and Dave's rules for plots*

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# *Authorship guidelines*

- all authors **must deserve** being authors
- all those who deserve being authors, **must be** authors
- all authors **carry responsibility for content** of paper
  - they must have read it!

# *Authorship requirements*

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- Substantial contribution to:
  - Conception and design
  - Acquisition of data
  - Data analysis/interpretation
- Draft/revise manuscript
- Final approval

# Authorship guidelines (NRCC)

*Substantial involvement* in at least two of following must be fulfilled to deserve authorship.

- the **concept, design and planning** of project
- **performance** of research
- **interpretation** of data
- **writing or review** of manuscript

**Implications:** -people only helping do experiments **are not authors** (named in acknowledgements);  
- **not all authors** are involved in data collection

# Authorship guidelines

- Intl Committee of Medical Journal Editors: "Acquisition of funding, collection of data or general supervision of the research group, alone, **does not justify authorship**"
- Ann. Surgery consensus statement on authorship: "Acquisition of funding, collection of data, contributing cases or general supervision of the research group, of itself, or just being Chair of the department, **does not justify authorship** if the criteria are not fulfilled"
- NRC: Being the manager responsible for a research group or research project **does not, of itself, justify authorship.**



# Random thoughts on refereeing

- refereeing is a critical part of our responsibility as scientists
- please **turn down a request** to referee a paper
  - if you **do not have time** to do it in the requested 2 weeks
  - if you have a **conflict of interest**
    - e.g. working on a similar paper and it would be to your benefit if this paper was slowed down
    - personal animosity with one of the authors (after all, doing a good refereeing job will help the author, so why do it for an enemy?)

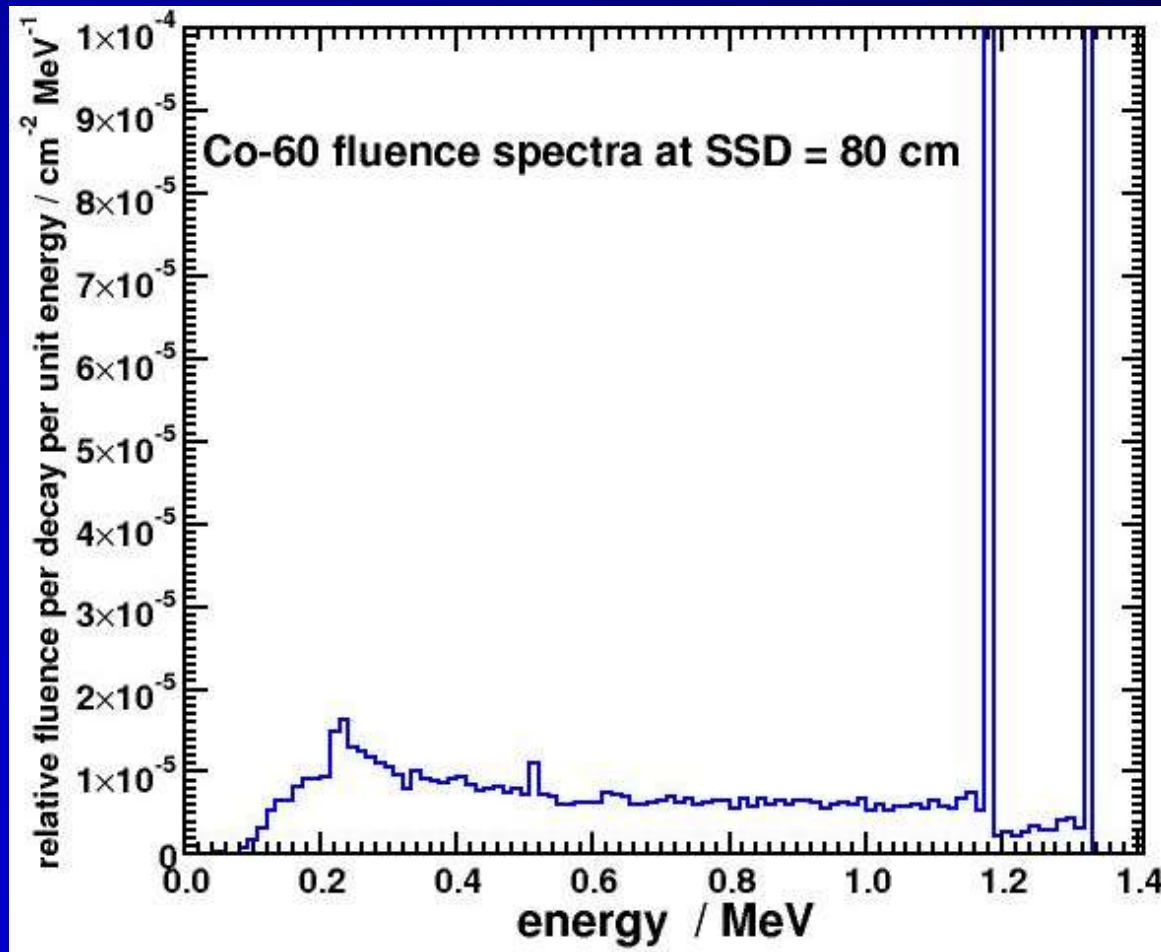
# *Dave's rules for figures*

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- thoughts on proper graphs
  - (as imposed on my own students)
- figures can be most important part of a paper
  - many people decide whether to read a paper by skimming the figures

# 1) labels should be lower case

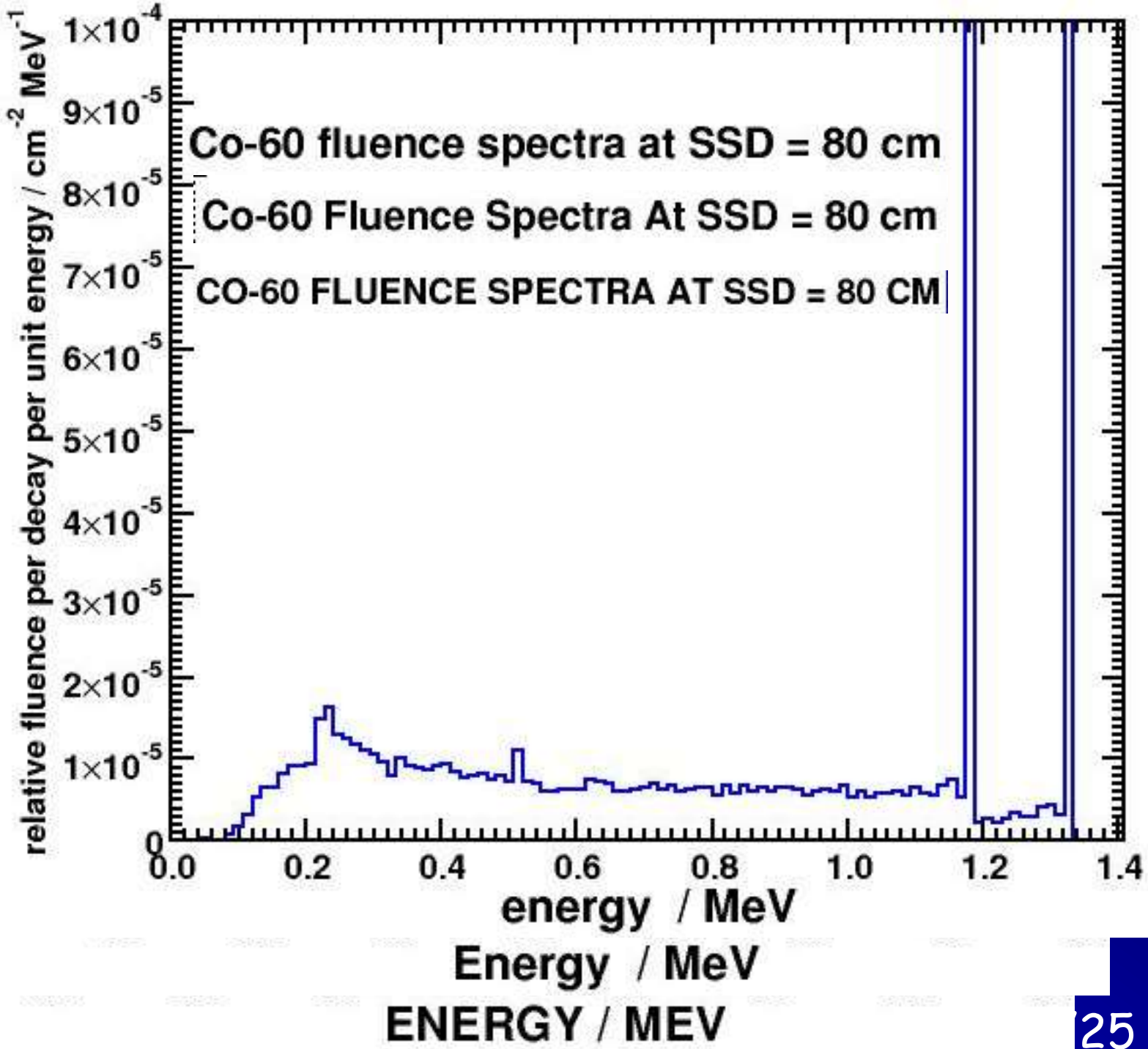
- except where capitals are mandatory (eg MeV, Gy)
- experts agree: **lower case is far easier to read**



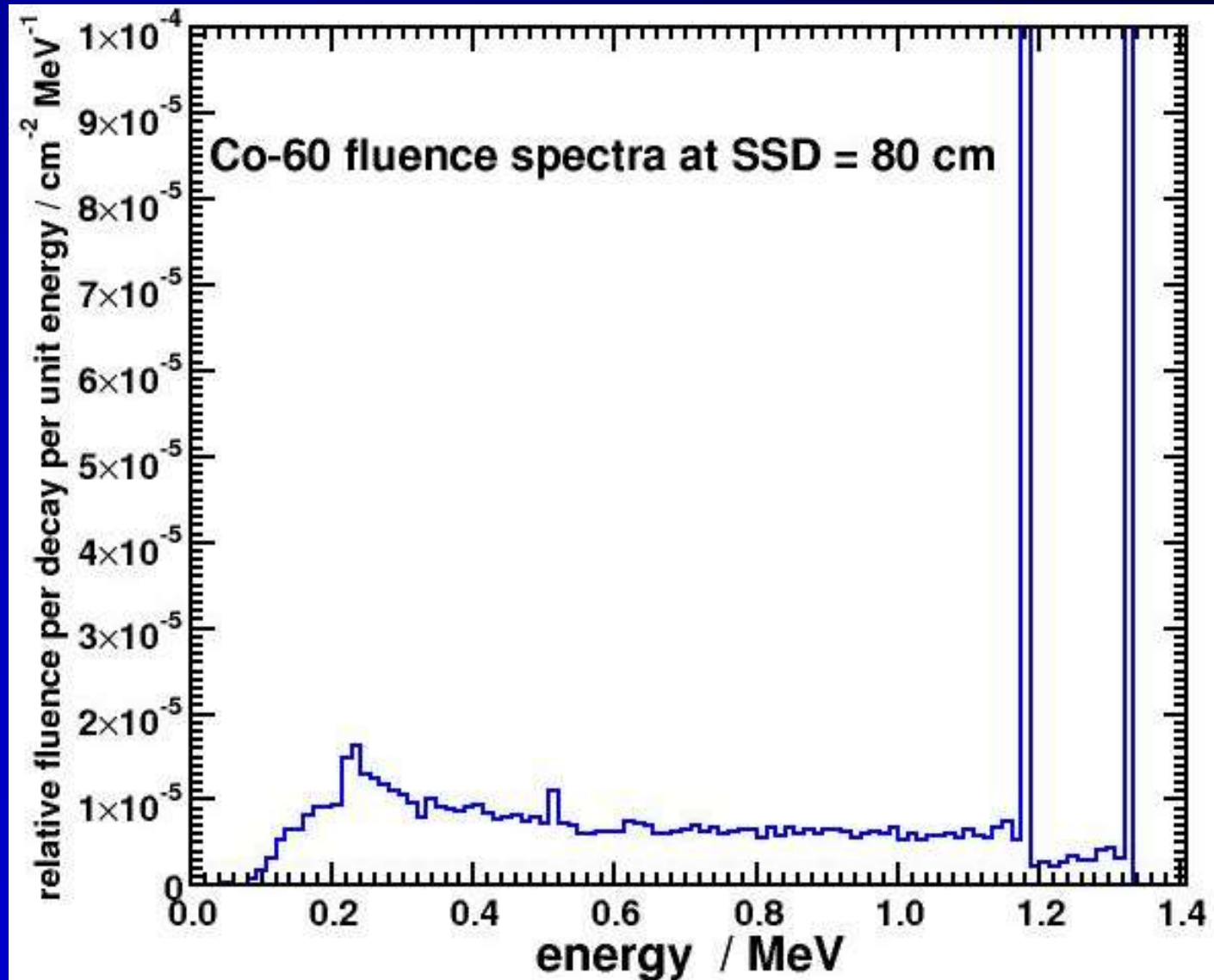


RELATIVE FLUENCE PER DECAY PER UNIT ENERGY / CM<sup>-2</sup> MEV<sup>-1</sup>

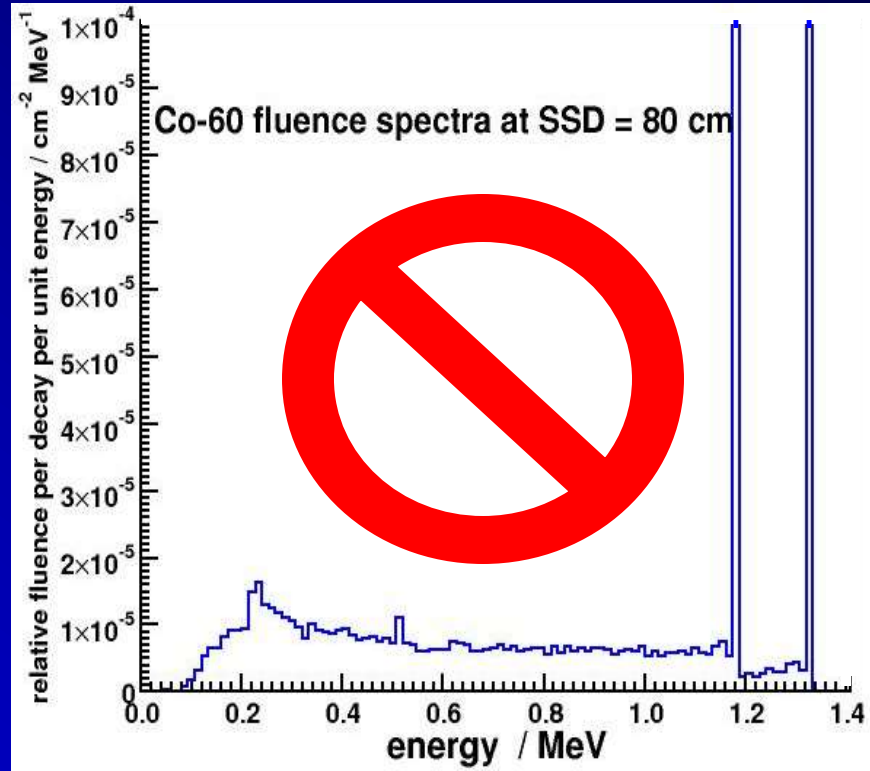
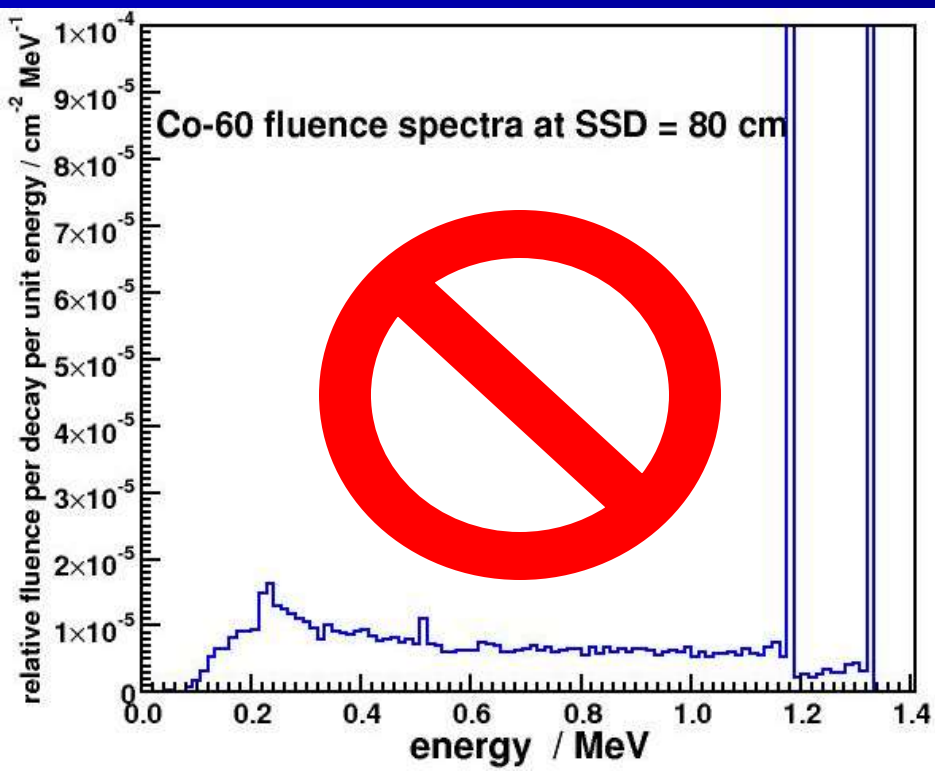
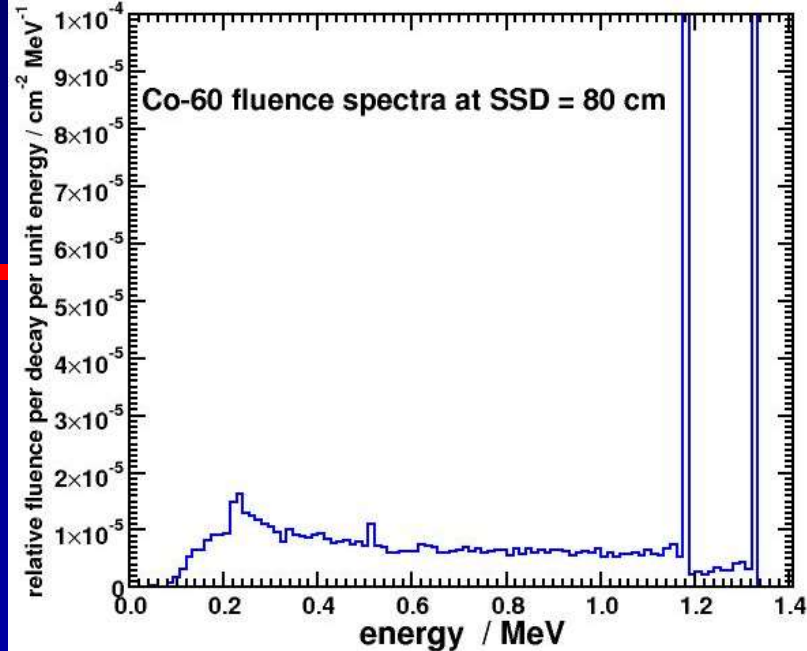
Relative Fluence Per Decay Per Unit Energy / cm<sup>-2</sup> MeV<sup>-1</sup>



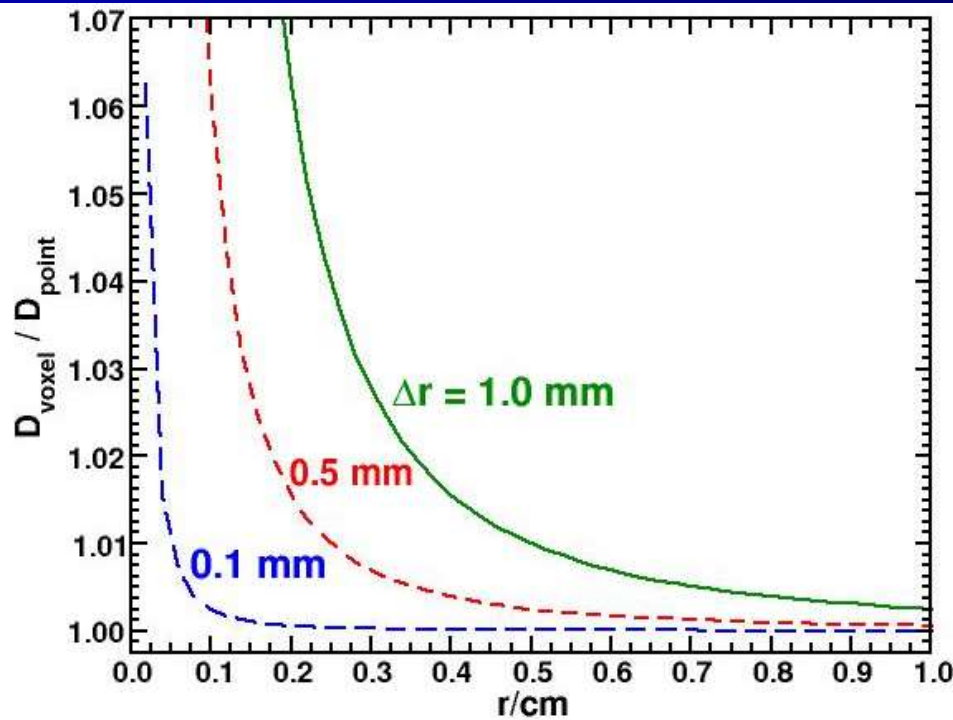
*2) always use axes and tick marks on all 4 sides*



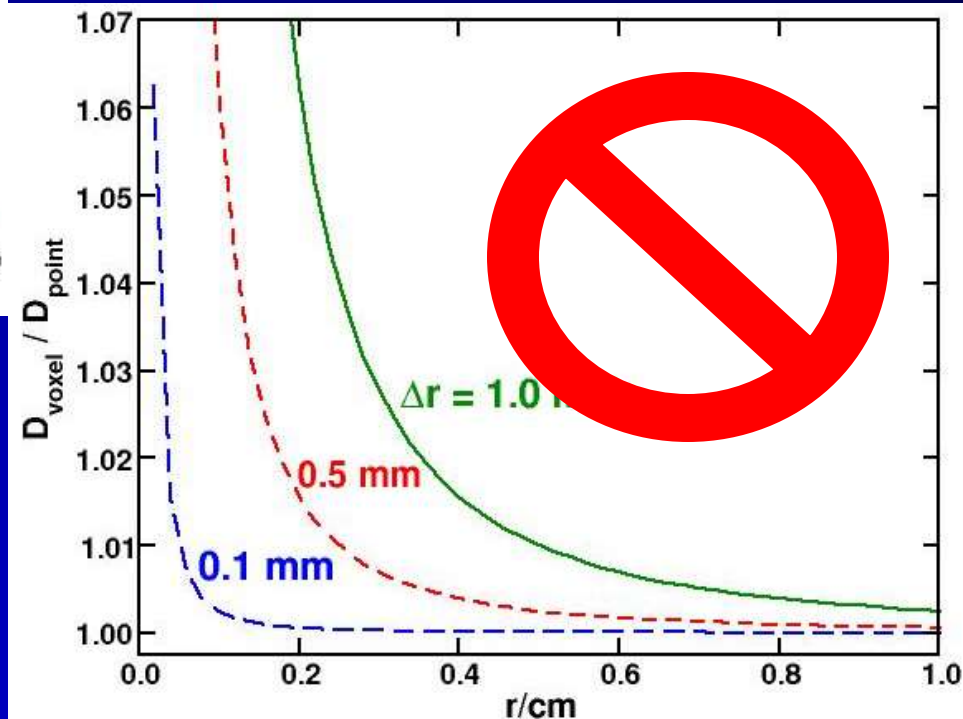
4 axes with ticks



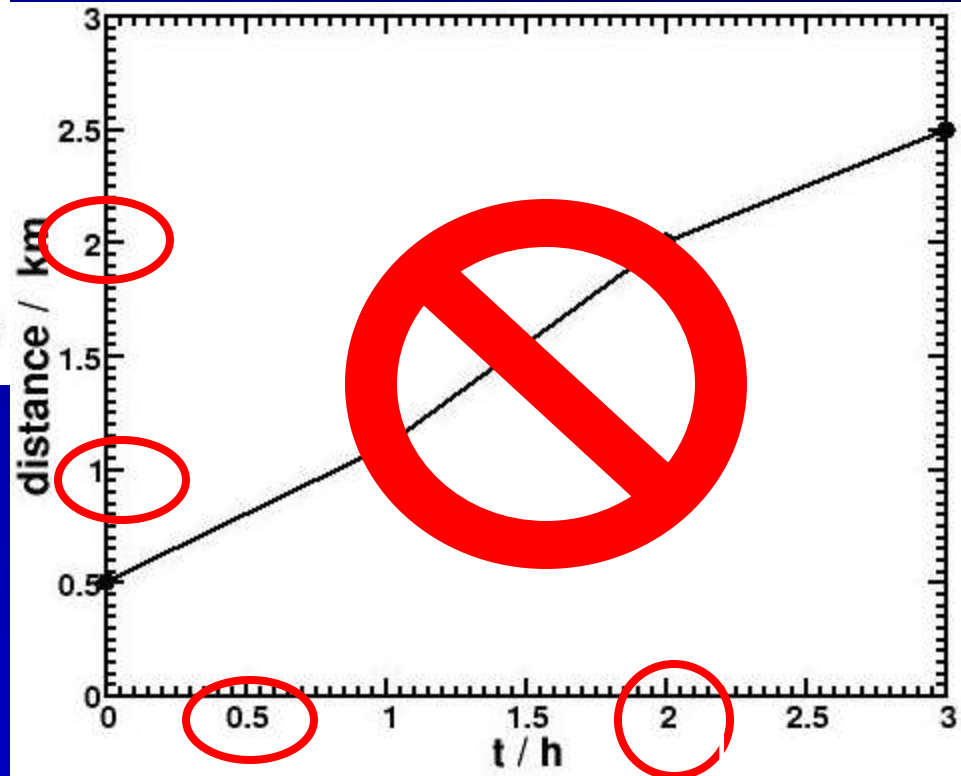
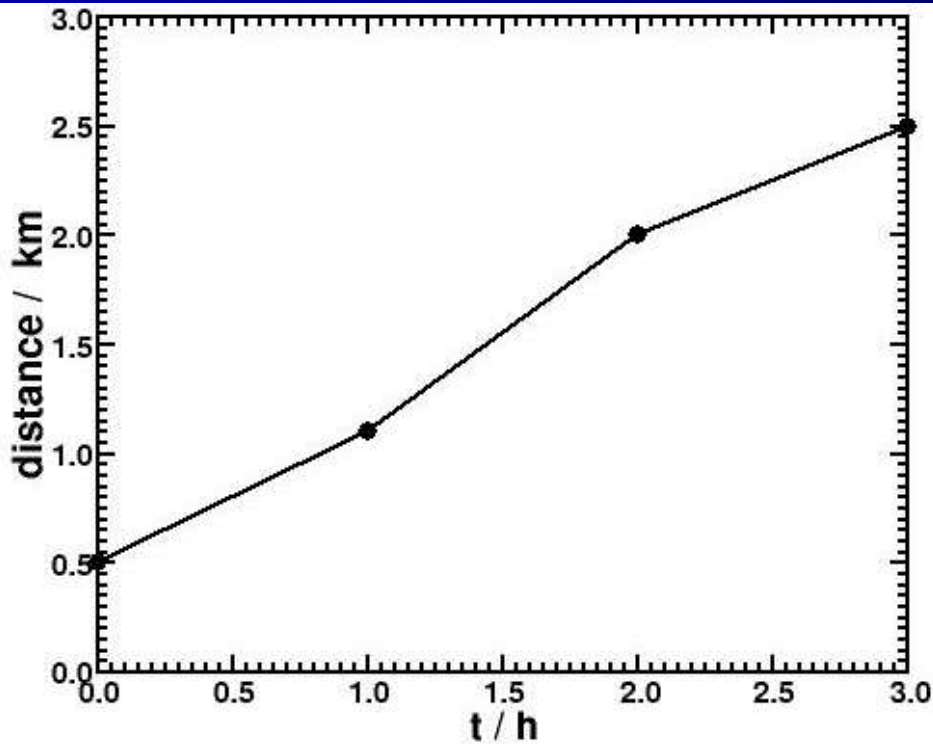
### 3) # ticks commensurate with accuracy



What is the ratio at 1 cm?  
How close can you be to get  
1% accuracy?

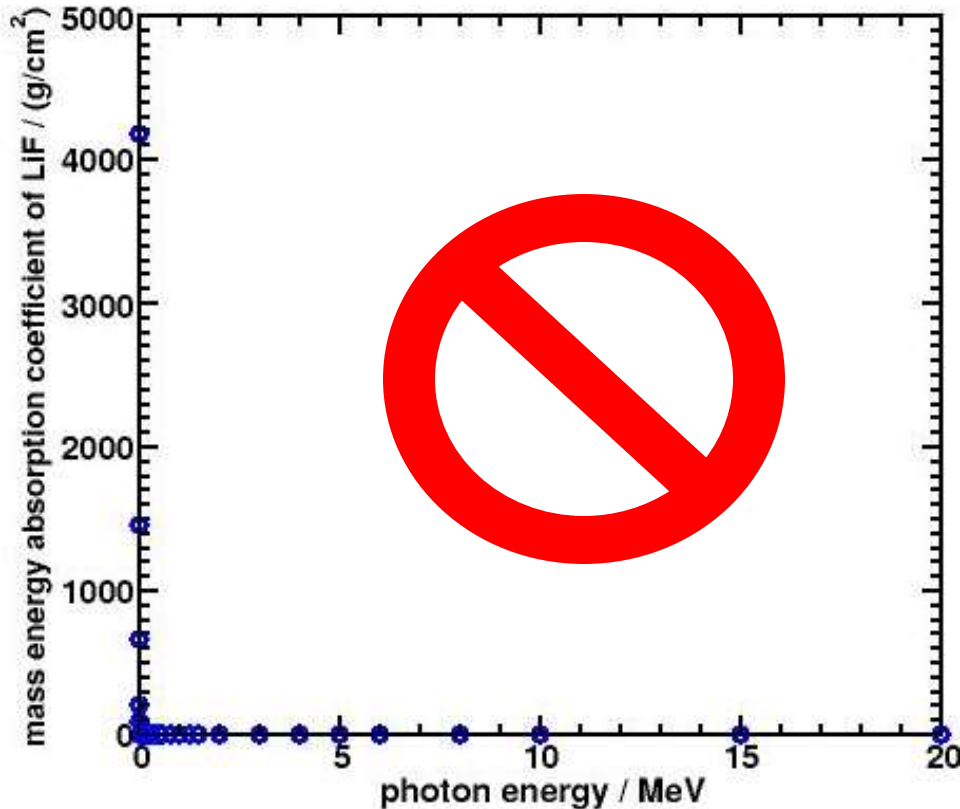
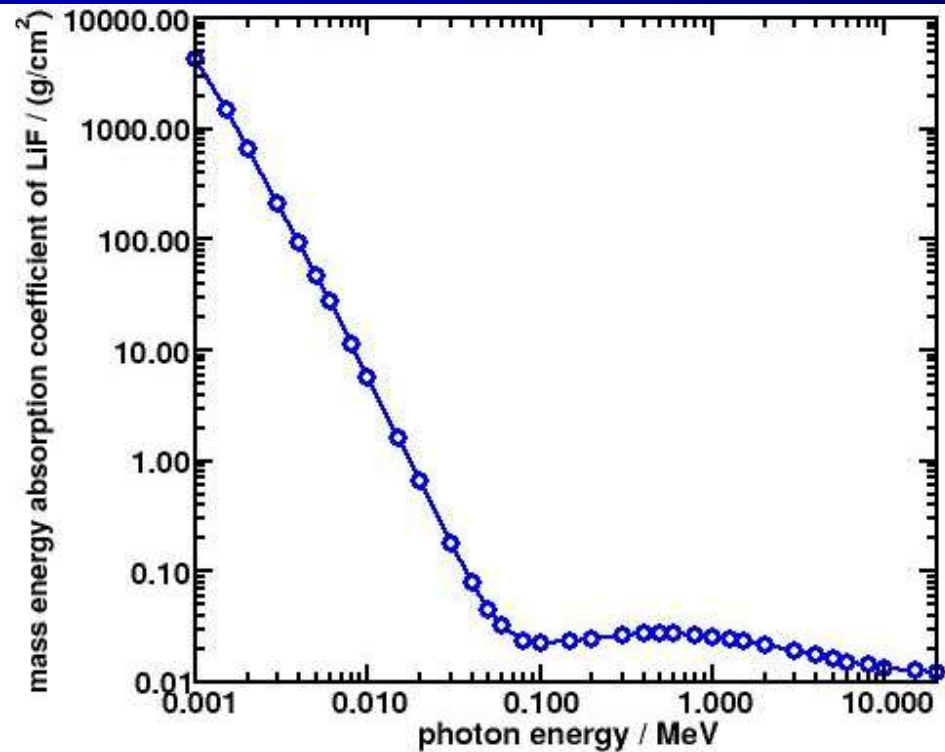


# 4) axis labels have a uniform # digits





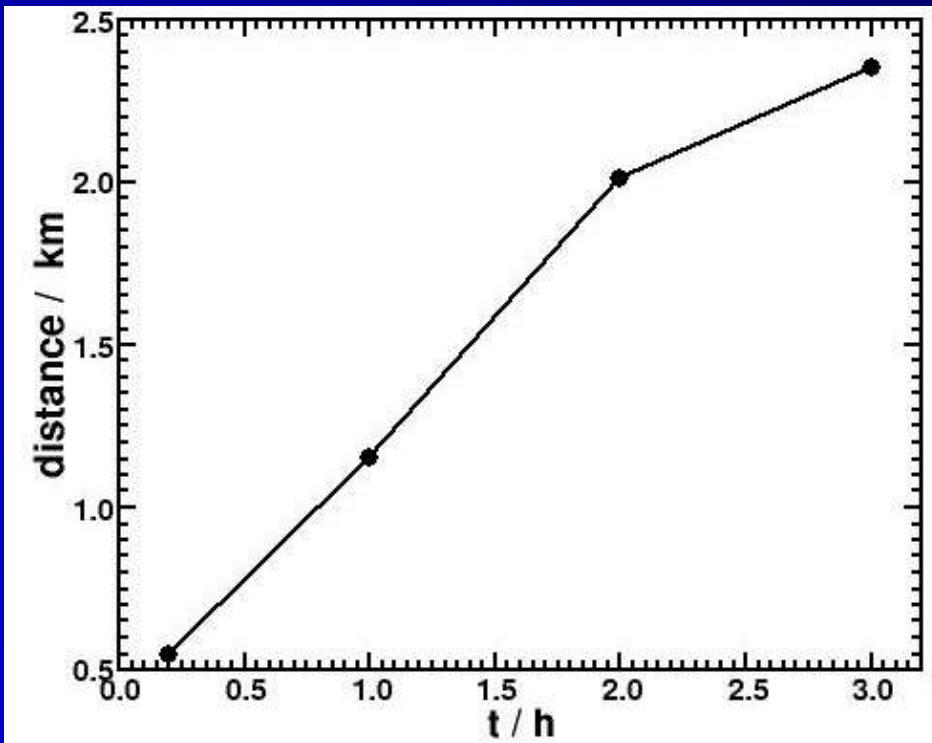
# 5) choose axis limits/forms to use area effectively



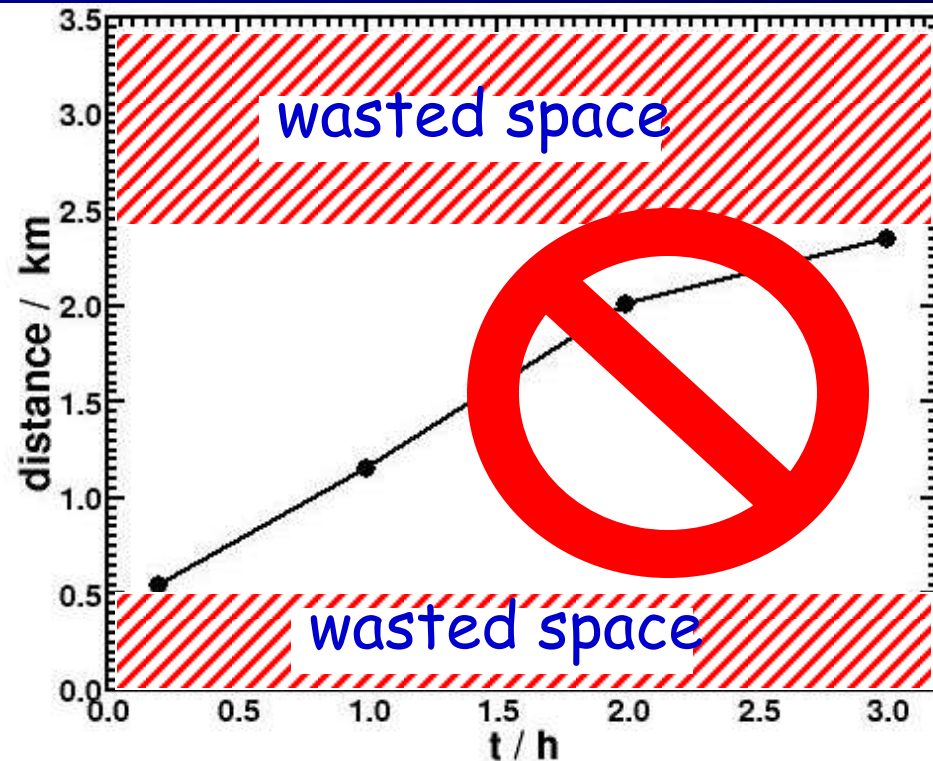
Use ratios to compare two nearly equal quantities



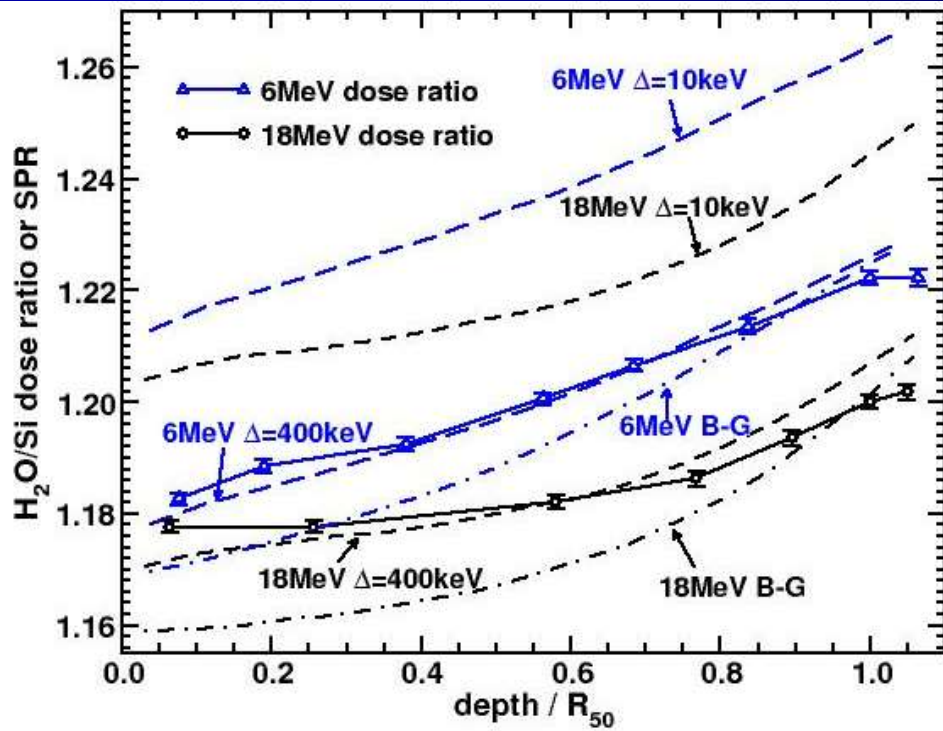
# 5) choose axis limits/forms to use area effectively



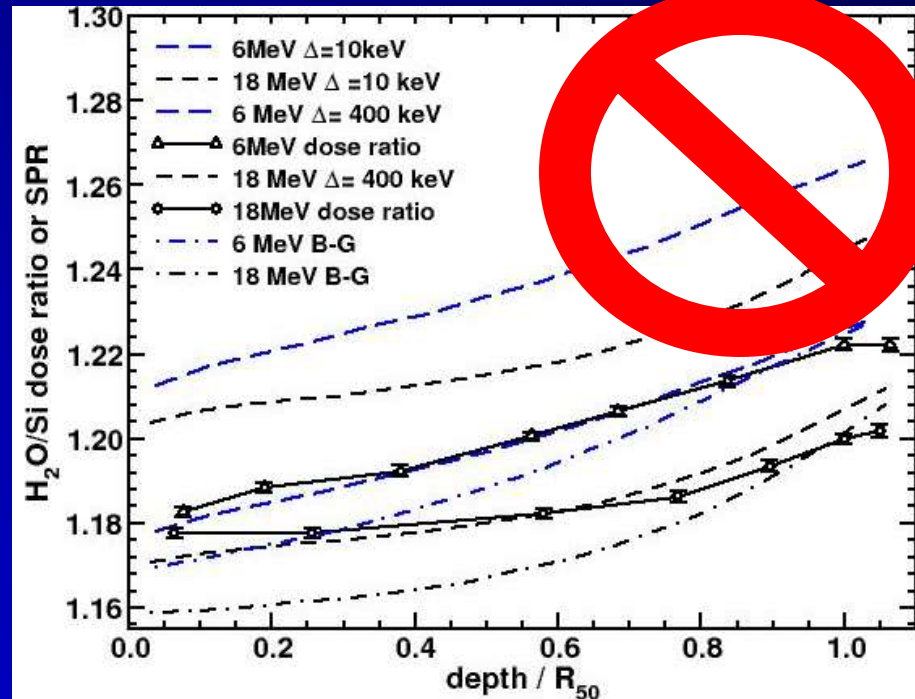
People often use ranges which are 30% too large  $\Rightarrow$  50% of space is useless



# 6) use arrows and labels rather than legends if possible

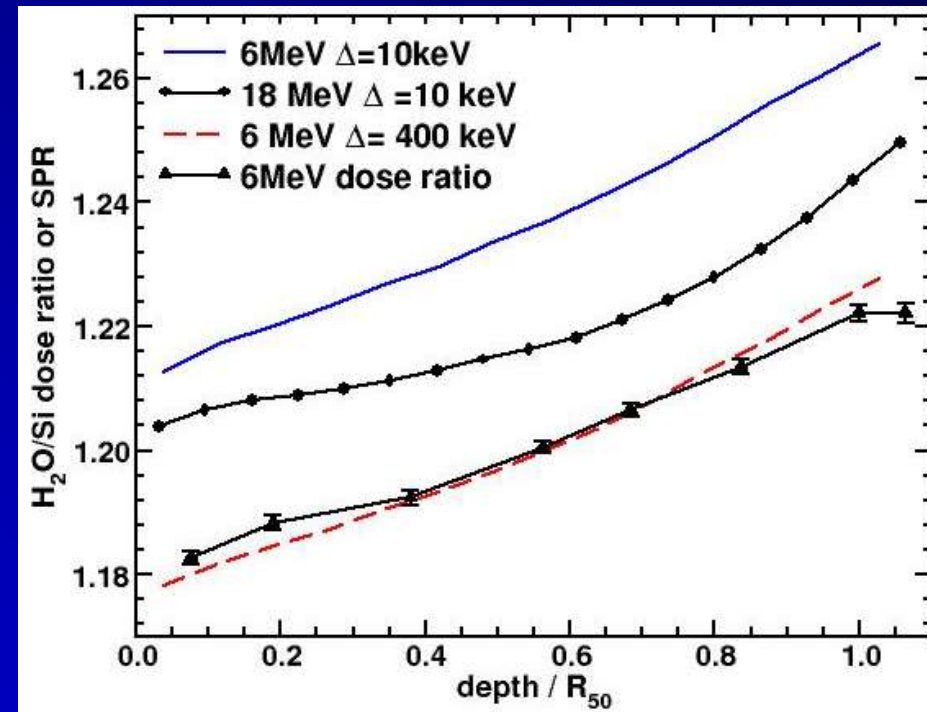
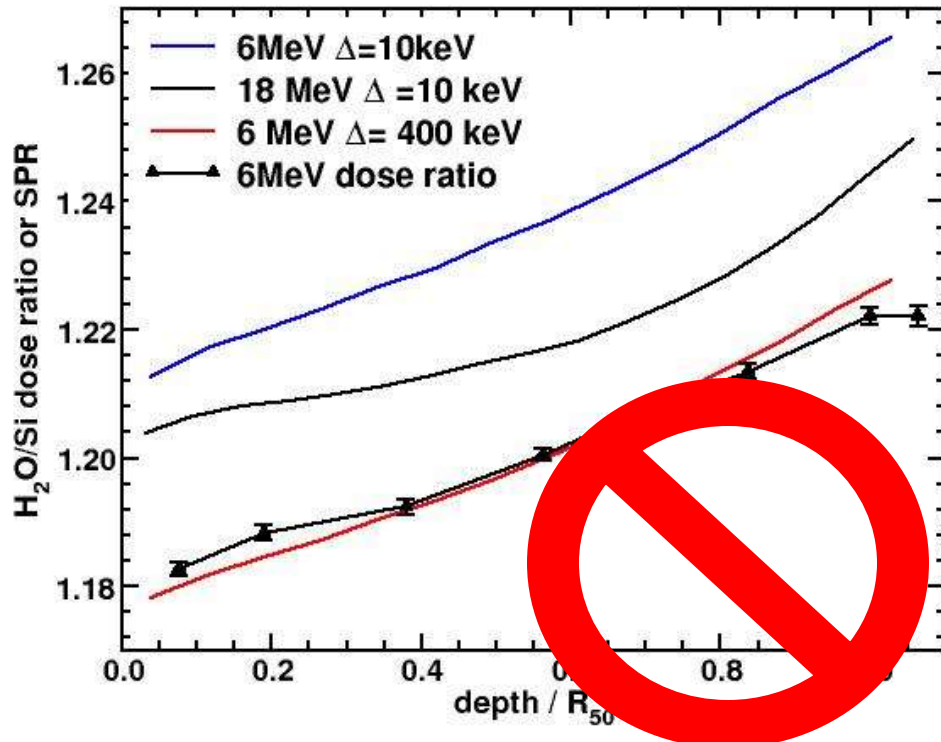


These are far too busy for use in a talk and possibly even in a paper

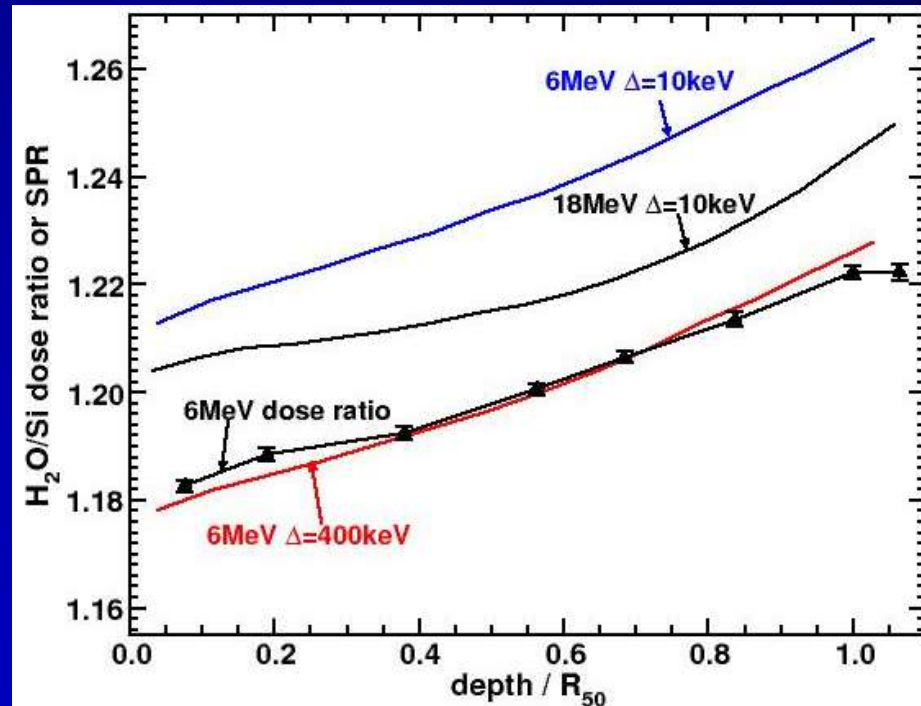
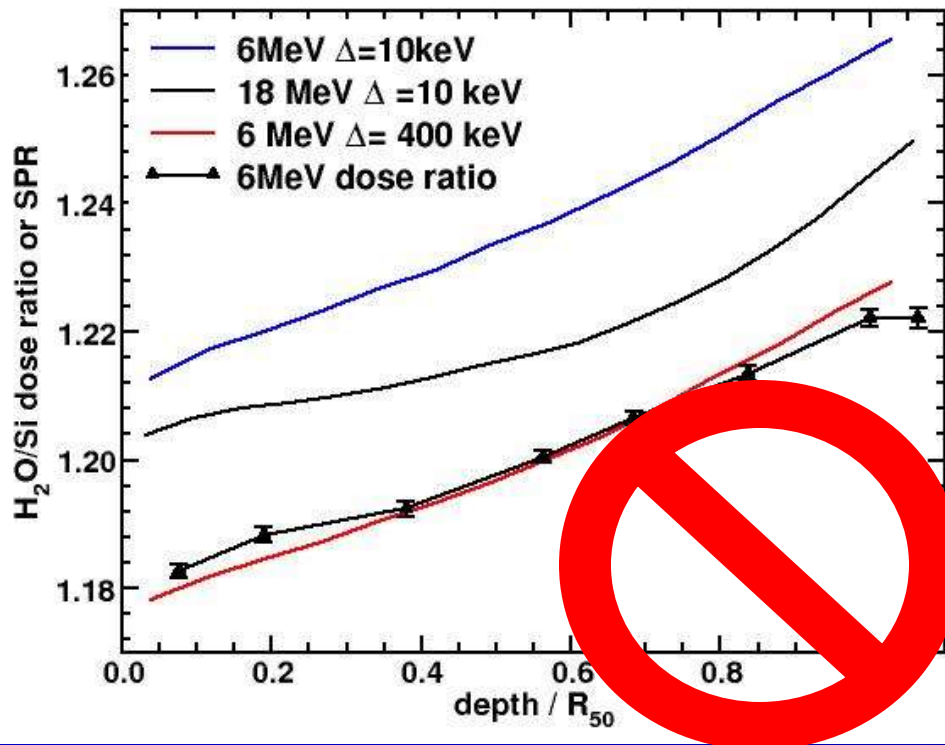


Added advantage: labels make the above work in black and white too.

7) make symbols & lines work in B&W, even if colour used for on-line version (referees use B&W printers)

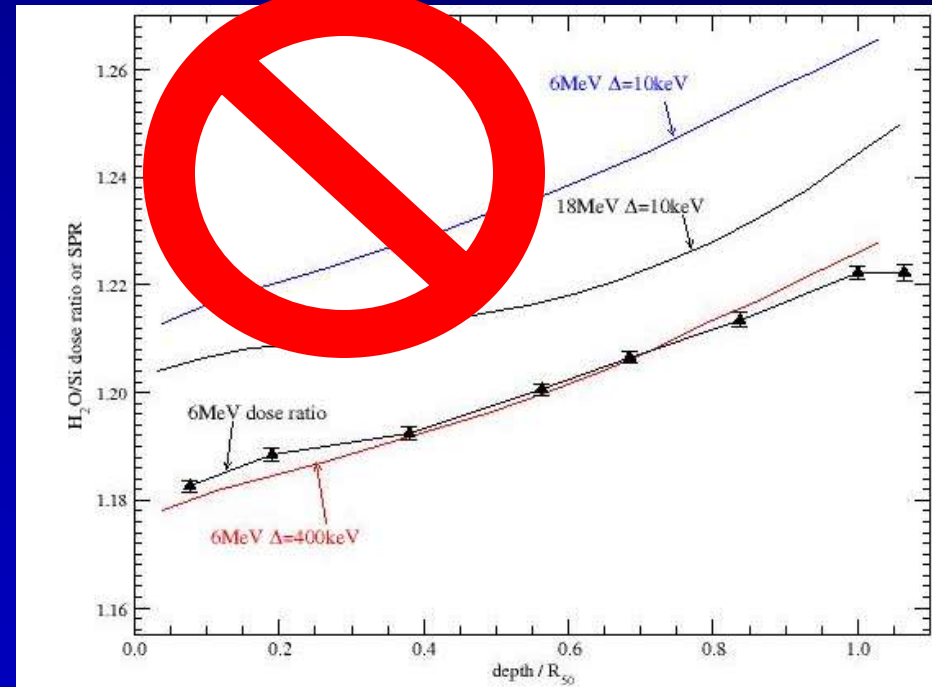
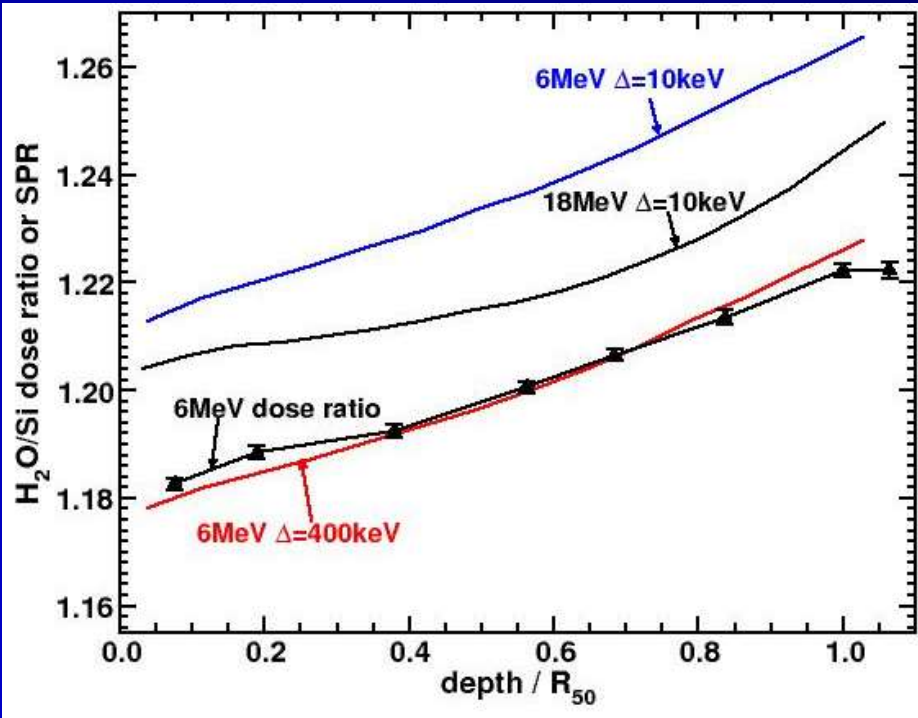


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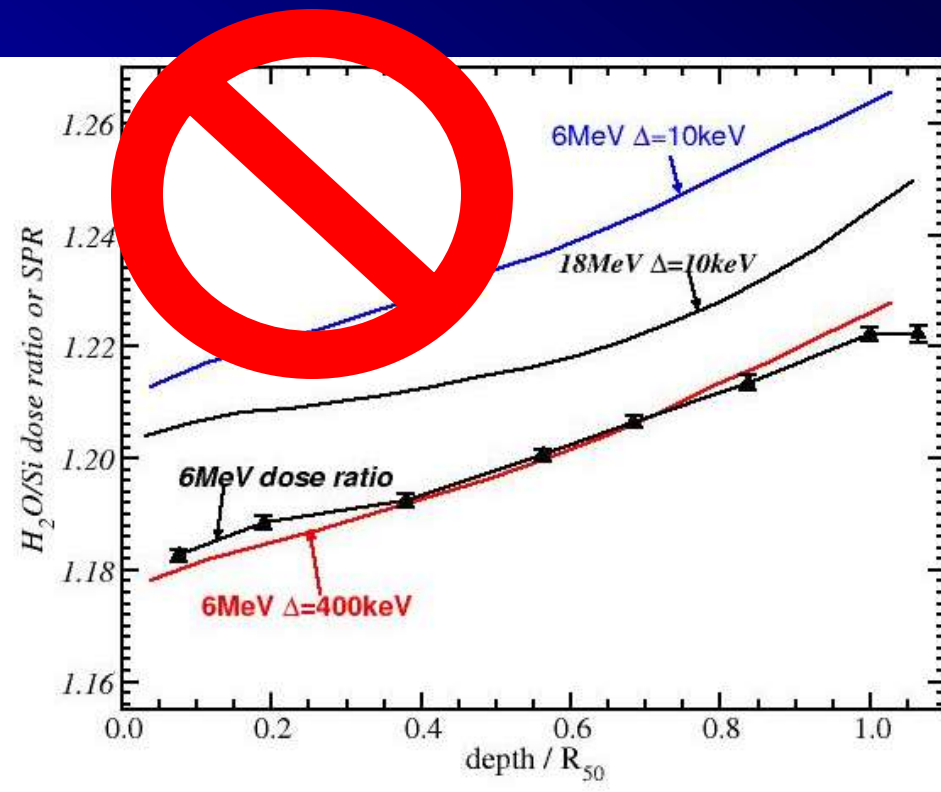
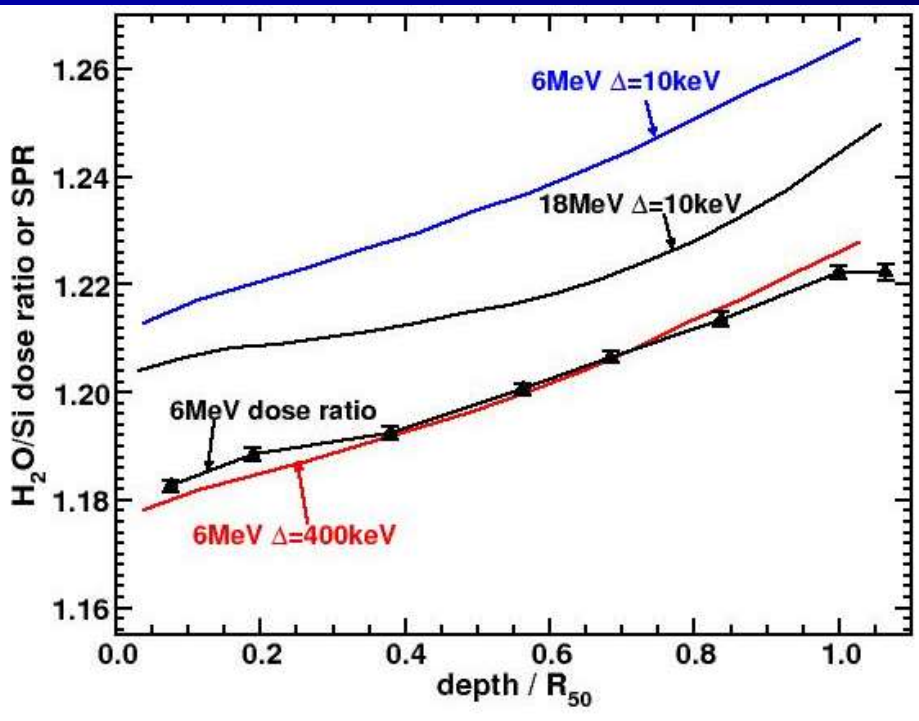




8) make sure all lines and font sizes are thick enough after reduction: figure will be 8.5 cm wide



9) use a consistent, clear font (I prefer helvetica or arial)

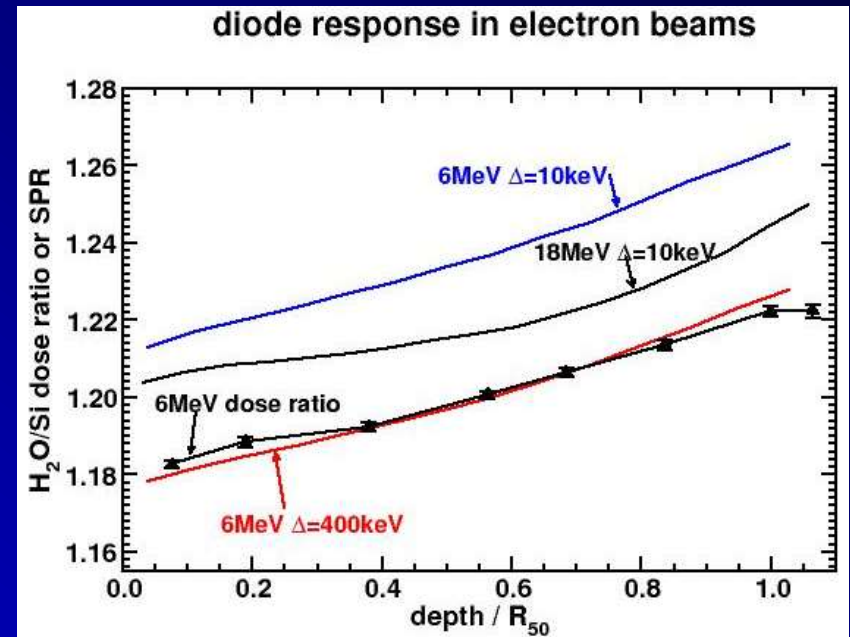
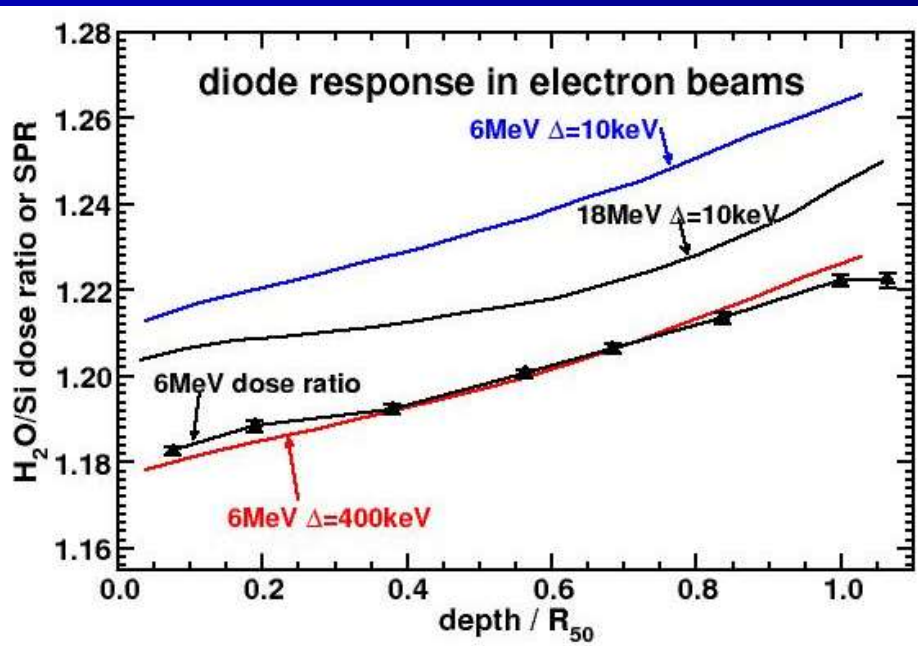




# *10) roughly square figures work best in the journal*

- Maximum width is about 8.7 cm = column width
- Height is adjusted as needed, but a tall narrow figure will be shrunk laterally.

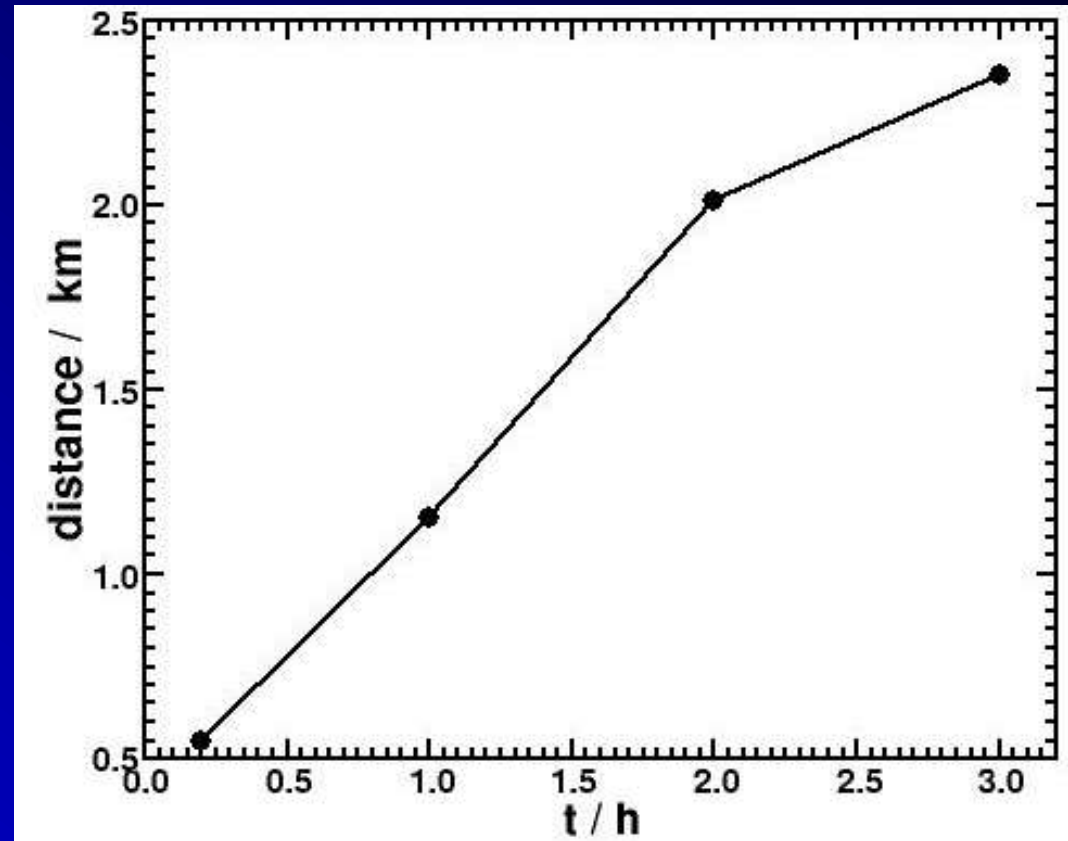
# 11) do not use titles/legends outside the axes



Graph on left makes far better use of the space

# 12) axis labels: quantity / units (SI) (personal preference)

The ICRU points out that we can only plot numbers, so what the axis should be is the quantity divided by the unit.



Whatever style you use, make sure the quantity being plotted is clearly labelled and the units clearly specified.

# 13) Captions should be self-contained

- People skim a paper by looking at the figures.
  -
- Make the captions **as self-contained as reasonable**, but don't repeat things.
- This will make your paper have **more impact**.

*Thank you for your attention*

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Good luck with your next paper 😊