

Authorship guidelines, thoughts on reviewing and producing good figures

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Slides on above website as Rogers_wc2015.pdf

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 guidelines (NRCC)

At least two of following must be fulfilled to deserve authorship.

- substantial involvement in the concept, design and planning of project
- substantial involvement in performance of research
- substantial involvement in interpretation of data
- substantial involvement in 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 requested time
 - 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?)

Random thoughts on refereeing (cont)

- one role of a referee is to determine if the work is scientifically sound
- it is not your role to force author to rewrite their paper the way you would write it
 - but it is fair game to make non-mandatory suggestions on how to improve it
- it is not your job as referee to correct English. Send it back to authors if it is really bad, and ask them to get a native English speaker who can write well, to rework the paper (correcting occasional errors/style mistakes is fine, of course)

Random thoughts on refereeing (cont)

- make your referee's comments clear and precise
 - distinguish clearly between suggestions and mandatory changes
 - avoid vague statements like "It is well known that..."
Give explicit references.
- if the authors make a statement about what paper X does or does not say, it is your responsibility as a referee to ensure this is what paper X actually said
 - especially if the author then disproves paper X
 - or if the accuracy of the present paper relies on what paper X is reported to have said.

Random thoughts on refereeing (cont)

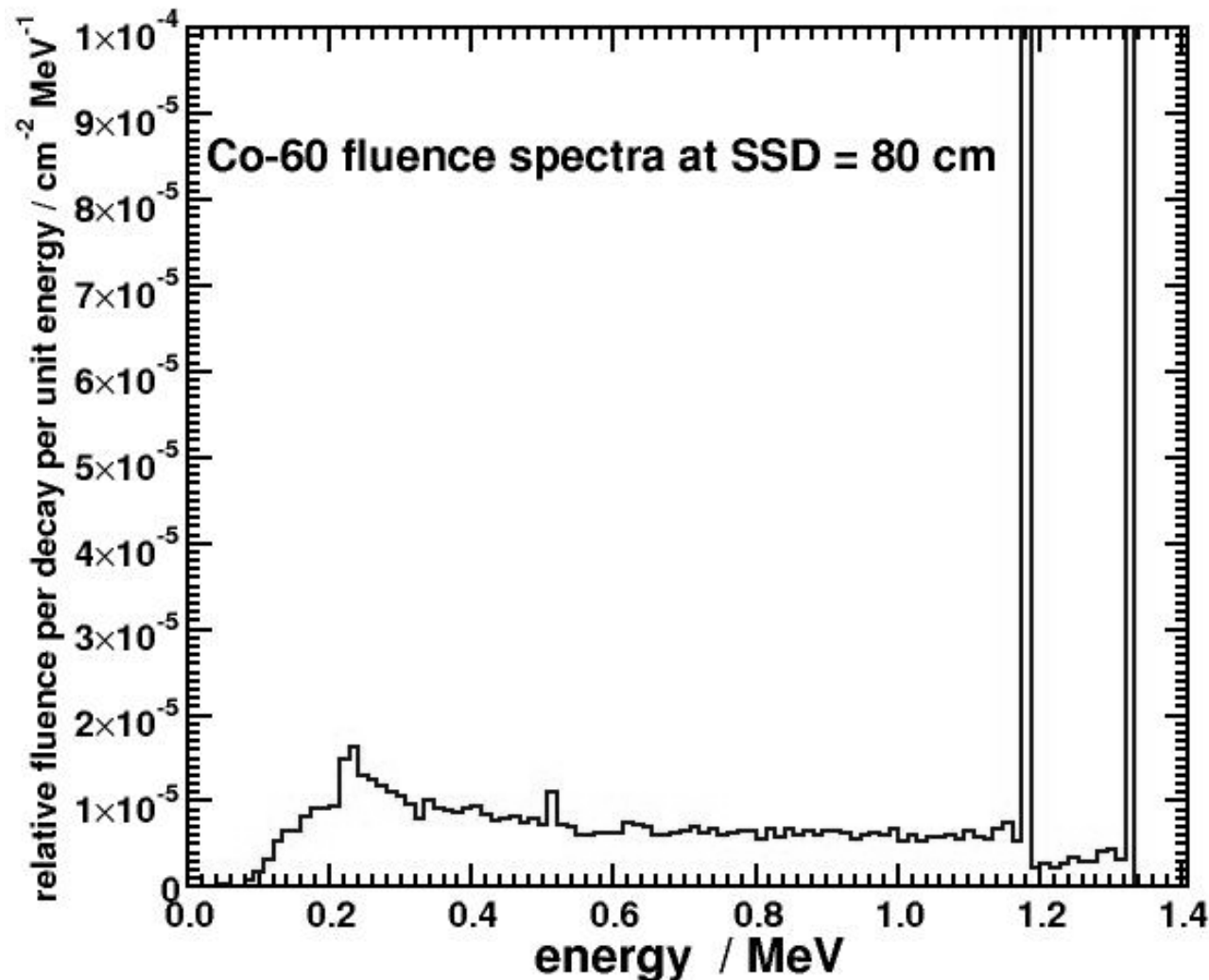
- remember to make your comments as impersonal as possible
 - authors have a great deal tied up in their paper and it is your job to help them make the paper better, not to show off how sharp your criticisms can be.
- Make it absolutely clear to the editor and to the author, what constitutes a "show stopper" issue vs less critical ones.

Dave's rules for figures

- 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

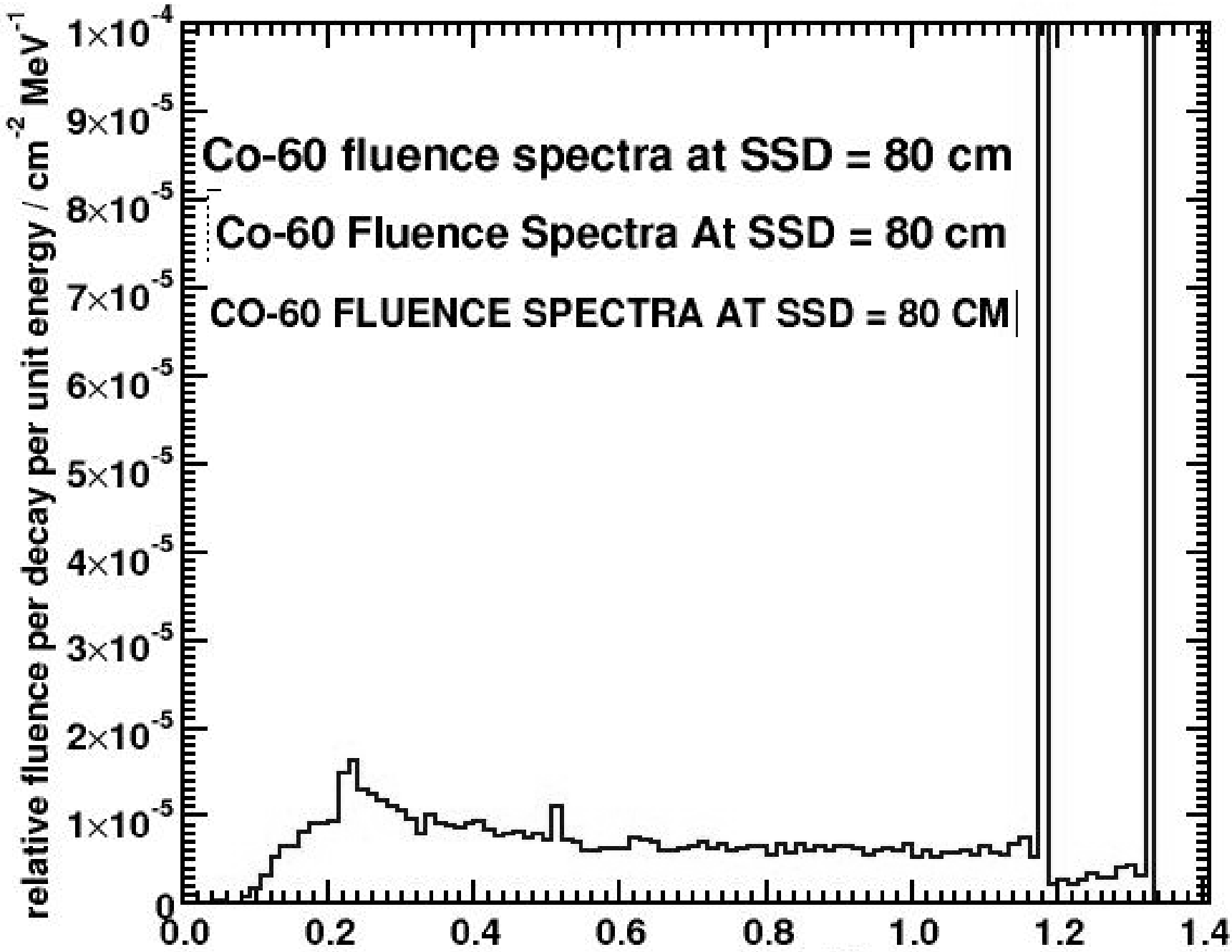
1) labels should be lower case

- 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⁻² MEV⁻¹

Relative Fluence Per Decay Per Unit Energy / cm⁻² MeV⁻¹

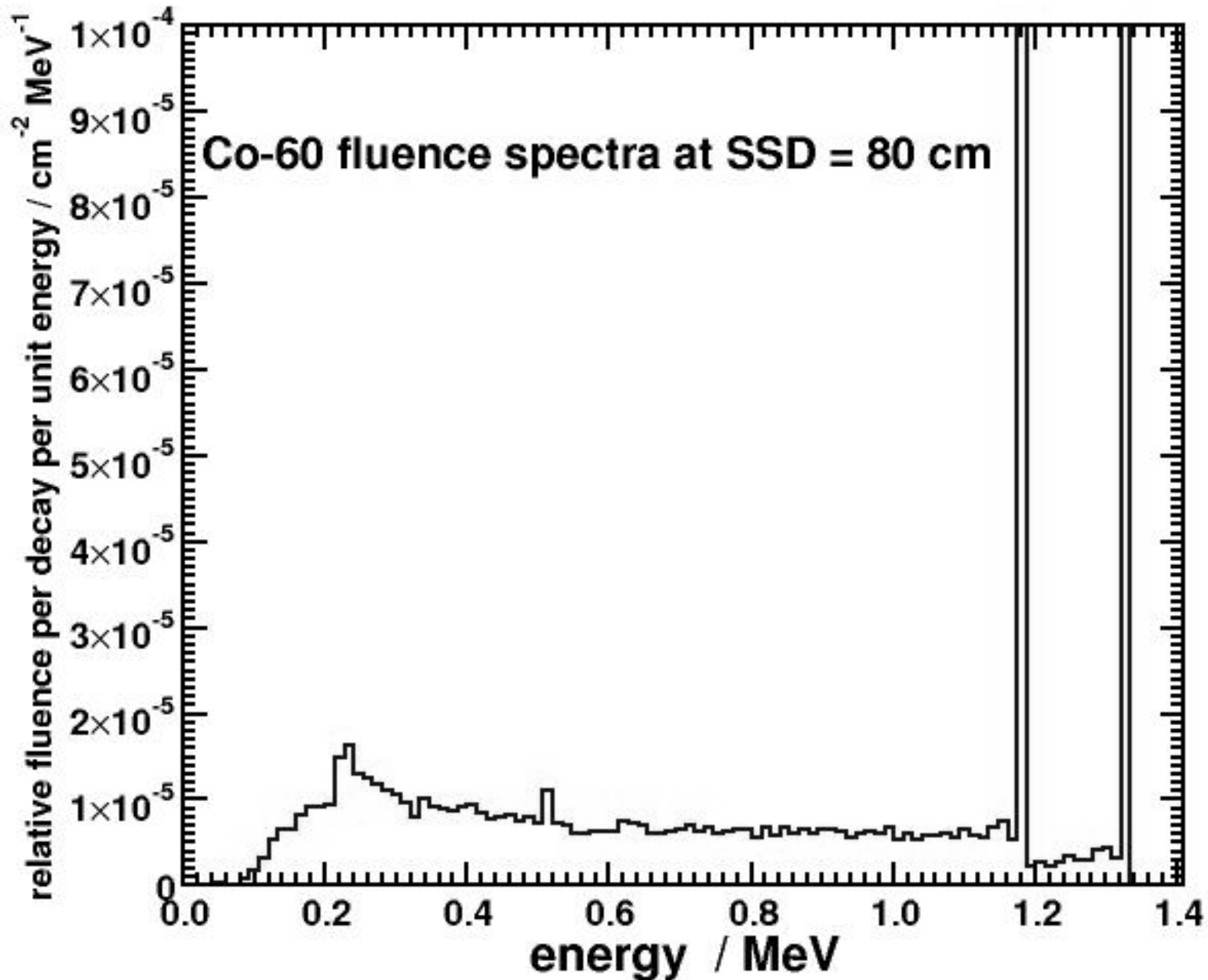


energy / MeV

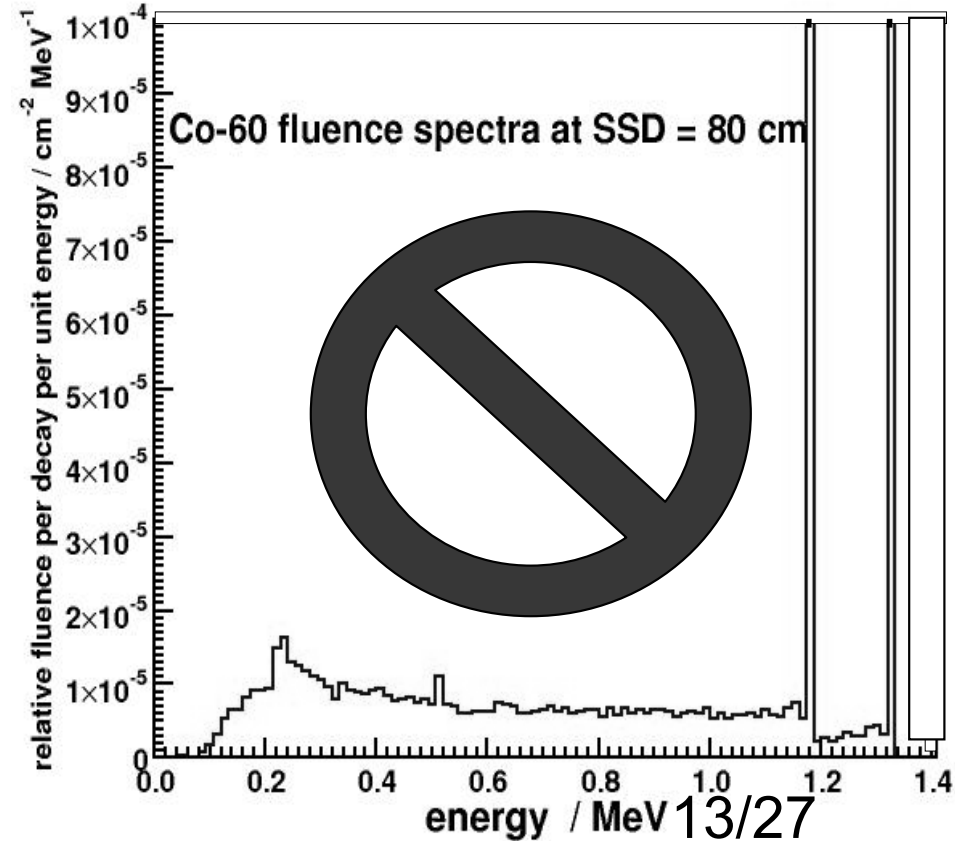
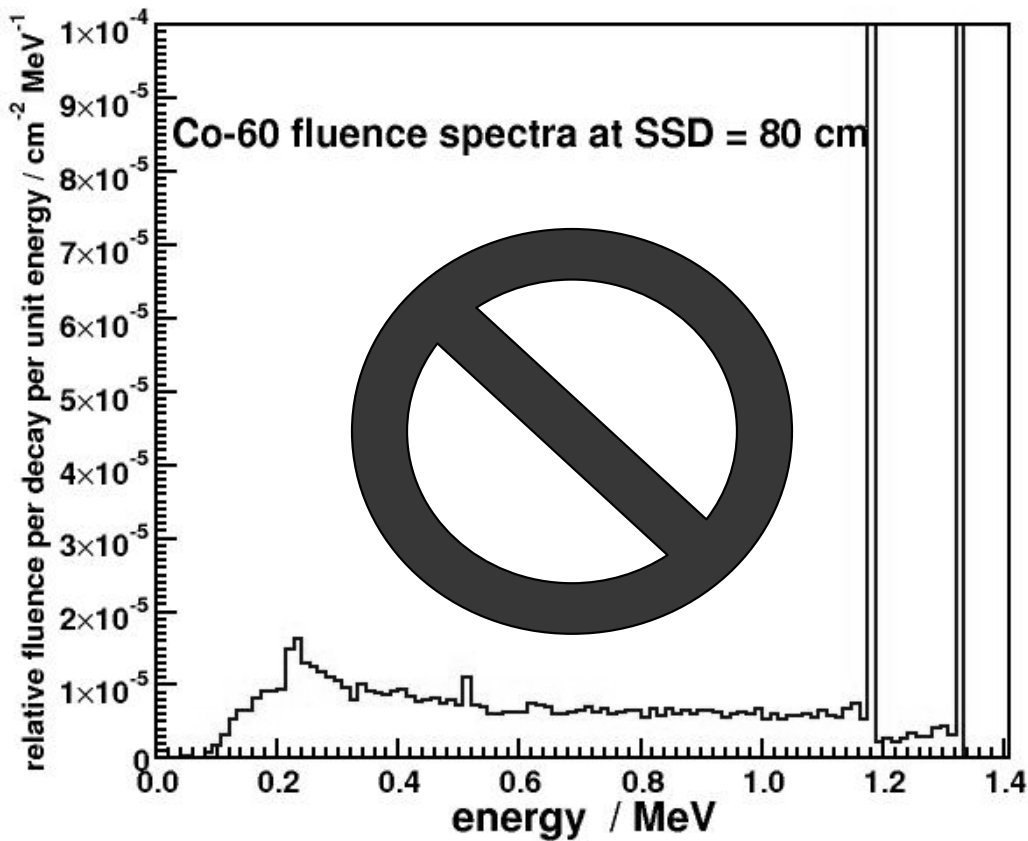
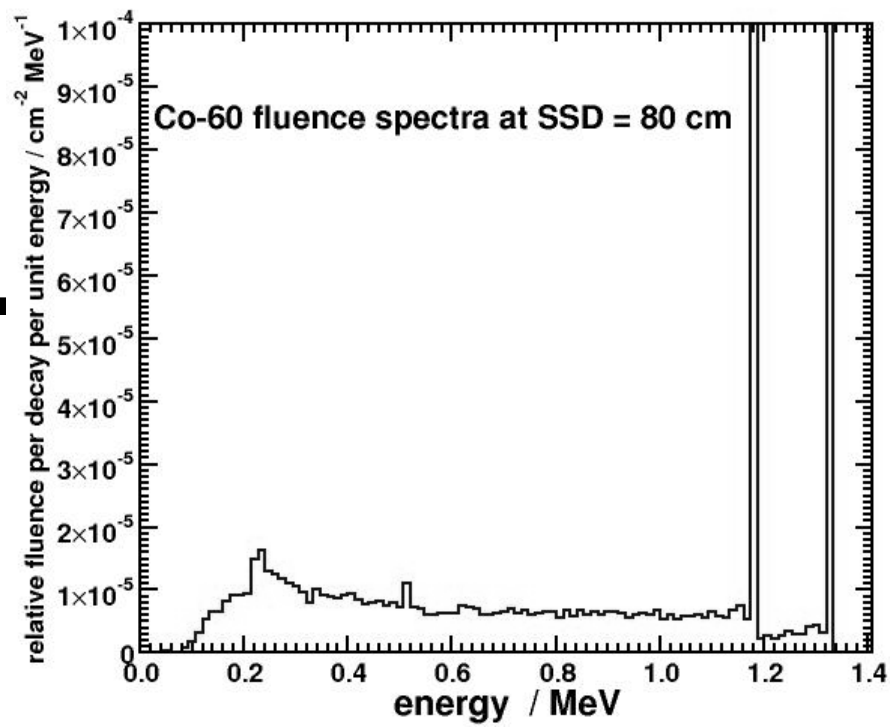
Energy / MeV

ENERGY / MEV

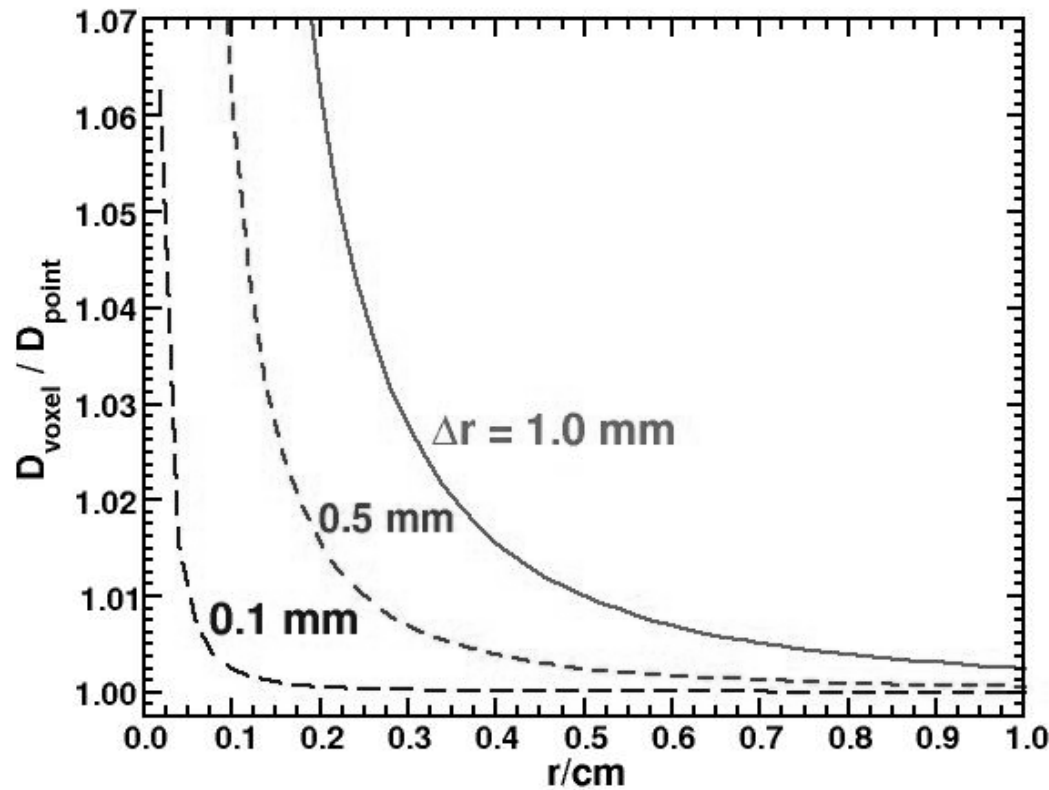
2) *always use axes and tick marks on all 4 sides*



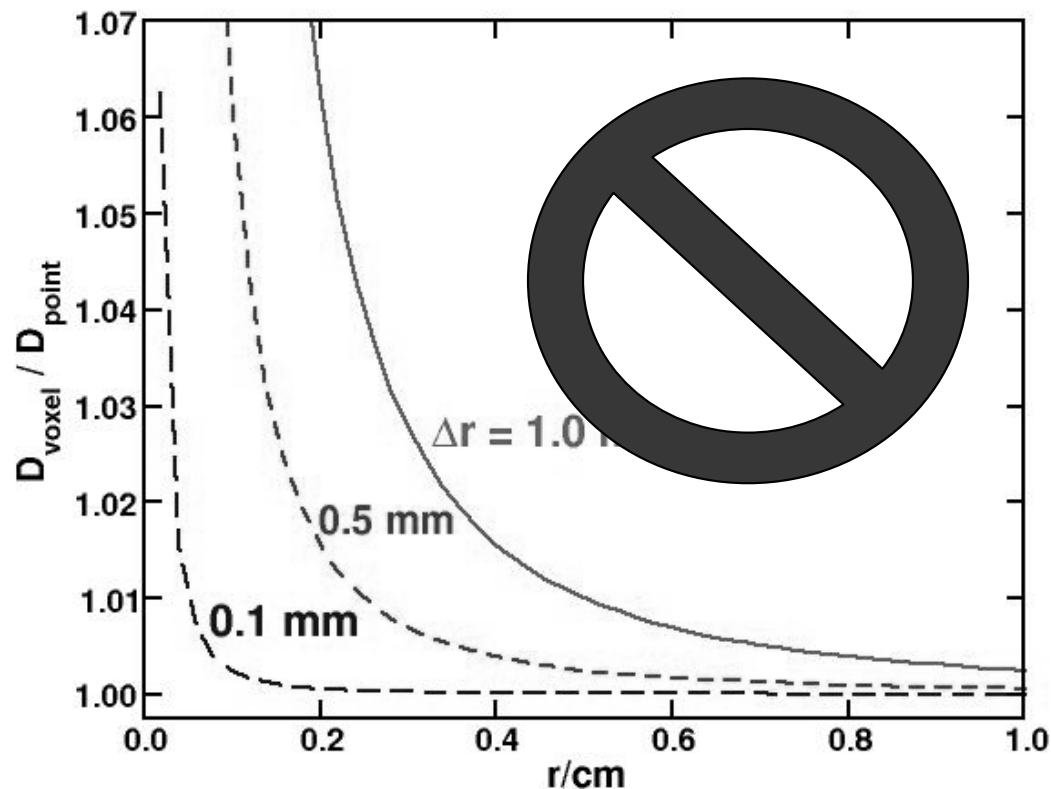
4 axes with
ticks



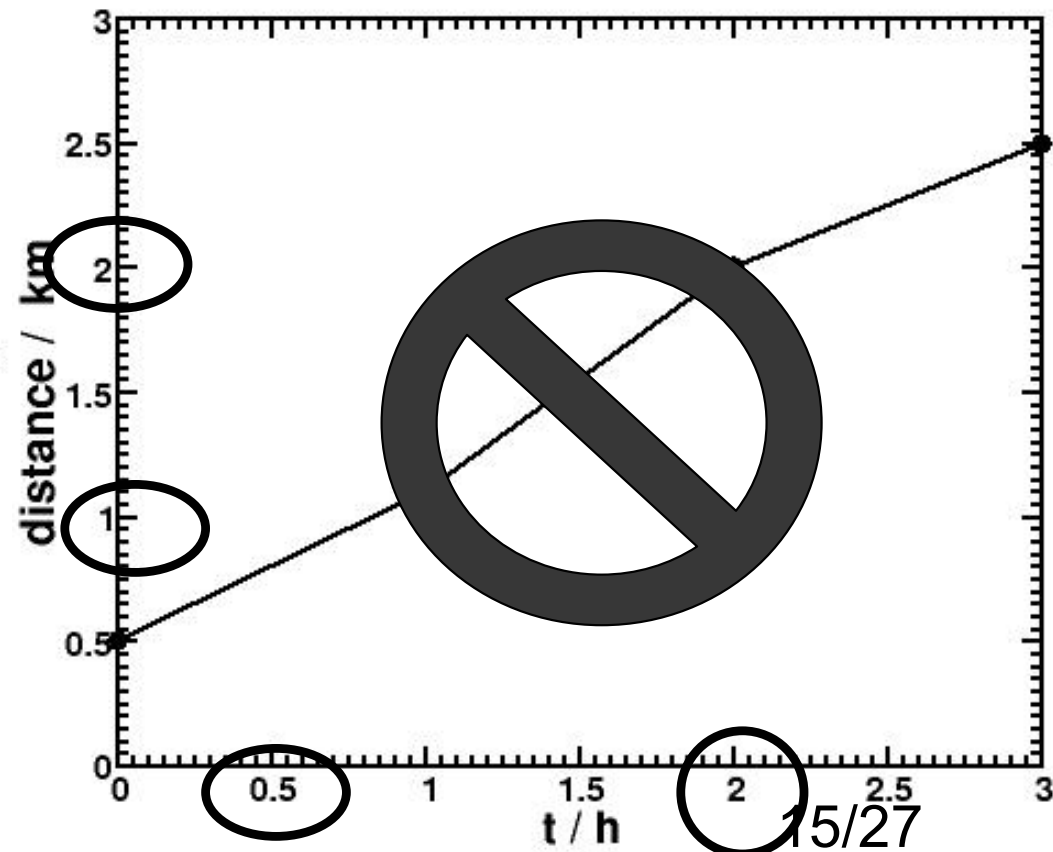
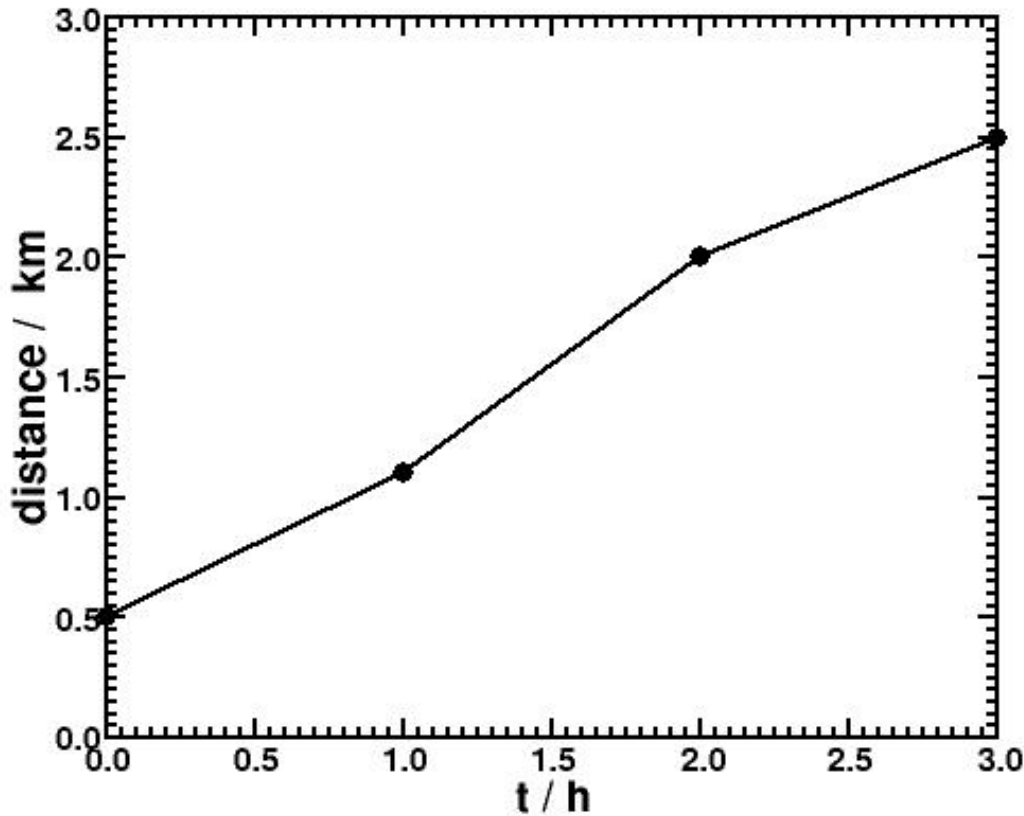
3) # ticks commensurate with accuracy



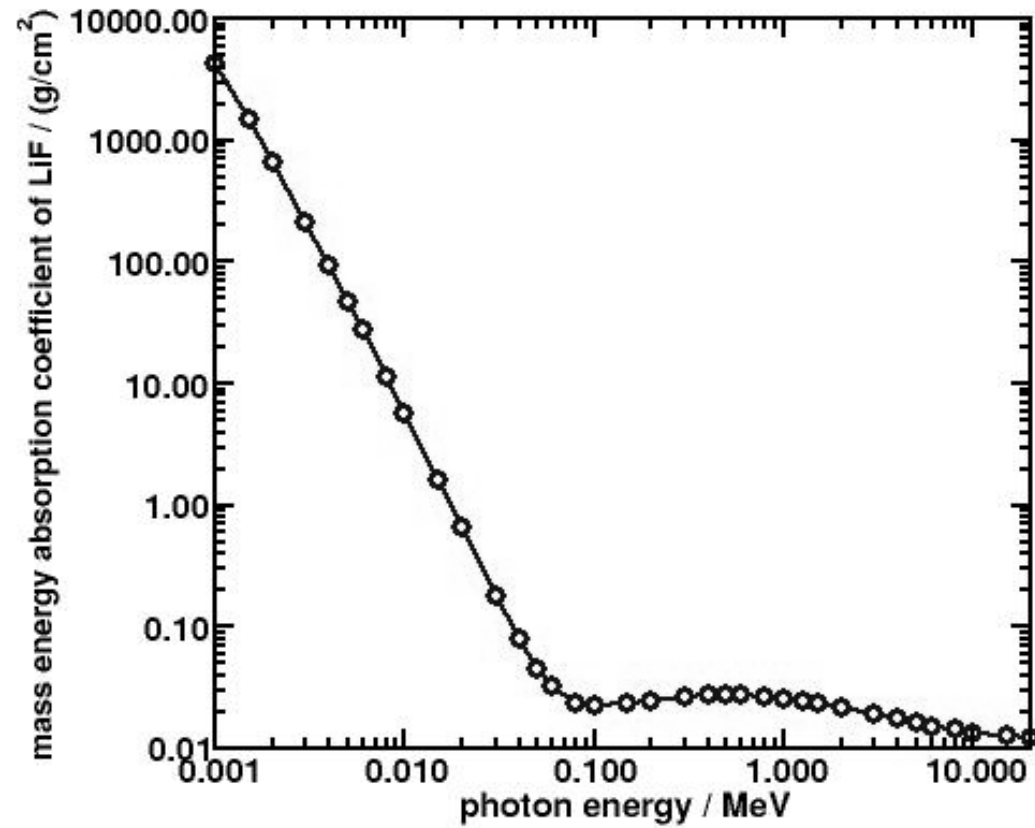
What is the ratio at 1 cm?
How close can you be to get
1% accuracy?



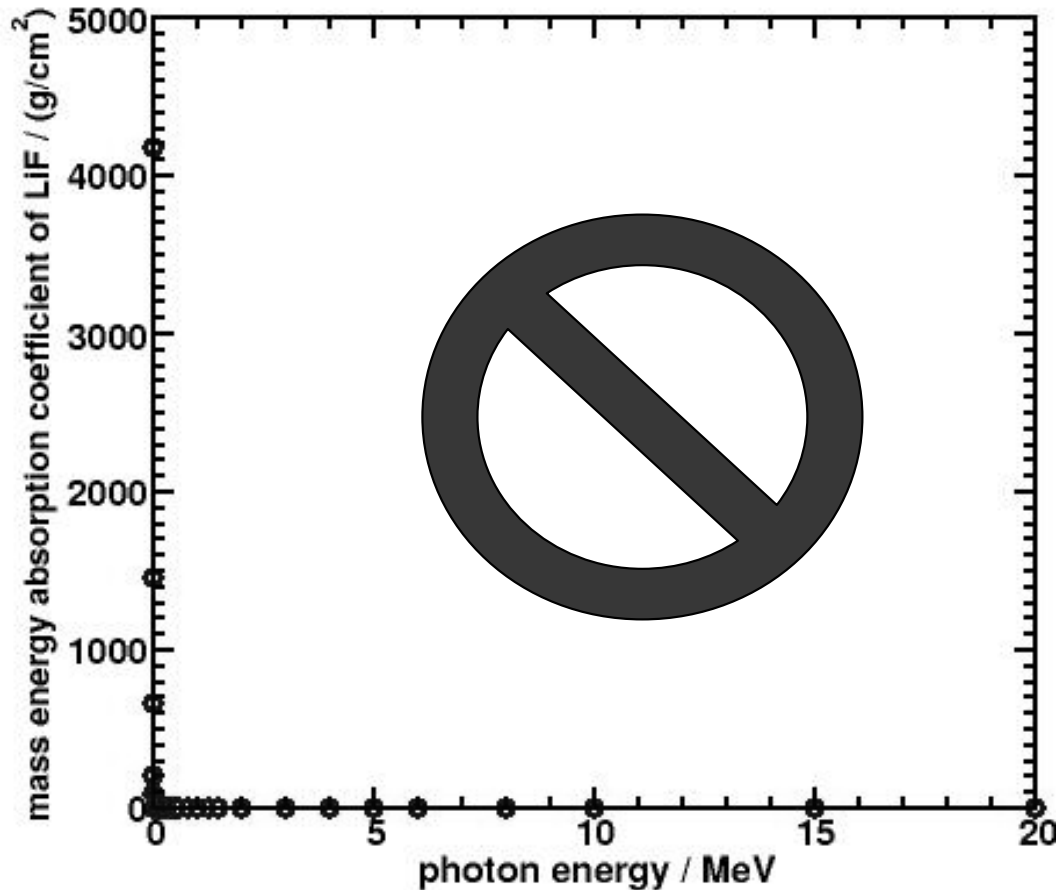
4) axis labels have a uniform # digits



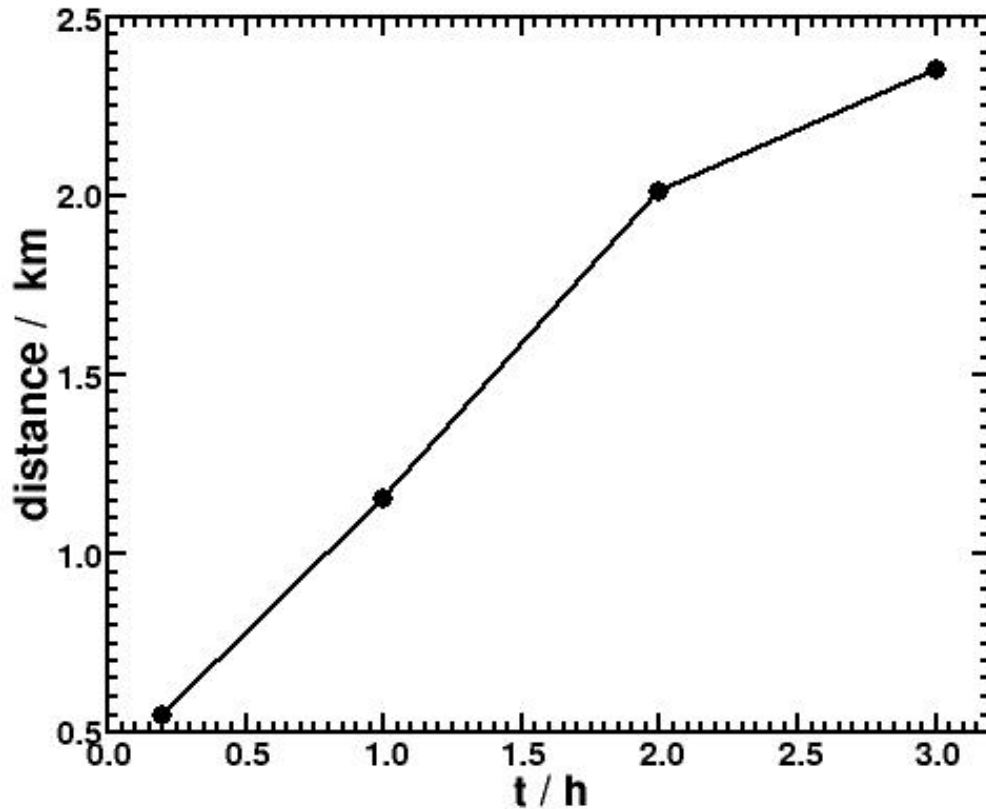
5) choose axis limits/forms to use area effectively



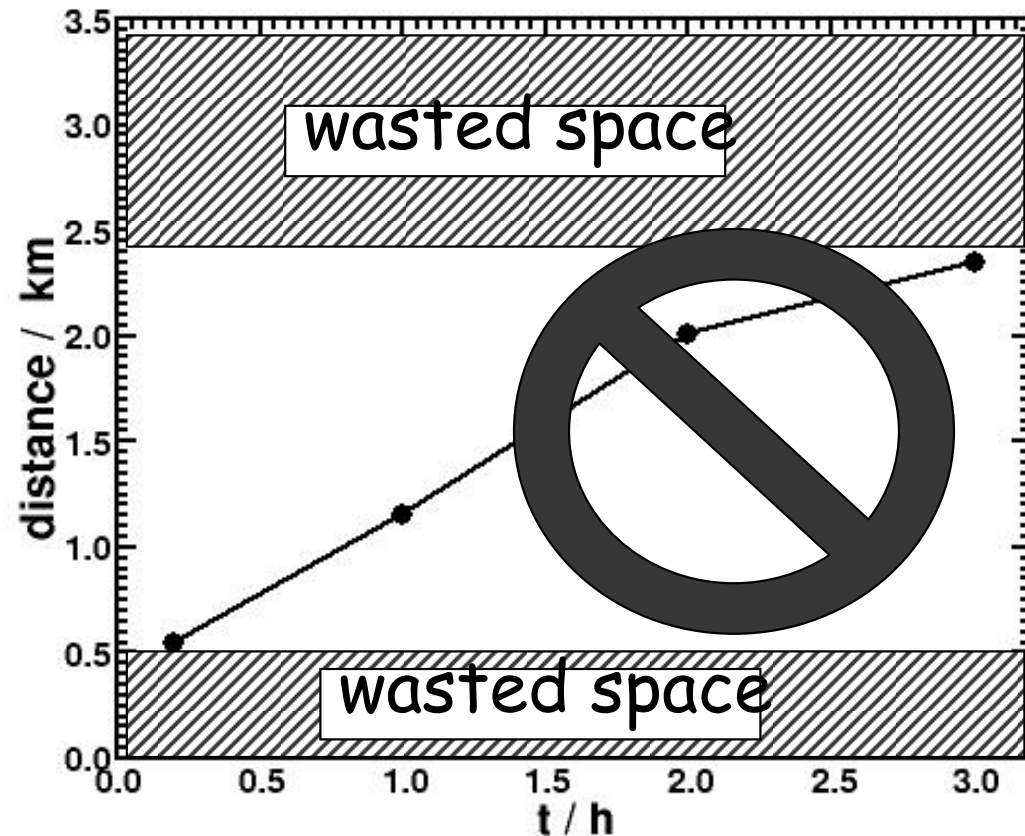
Use ratios to compare two nearly equal quantities



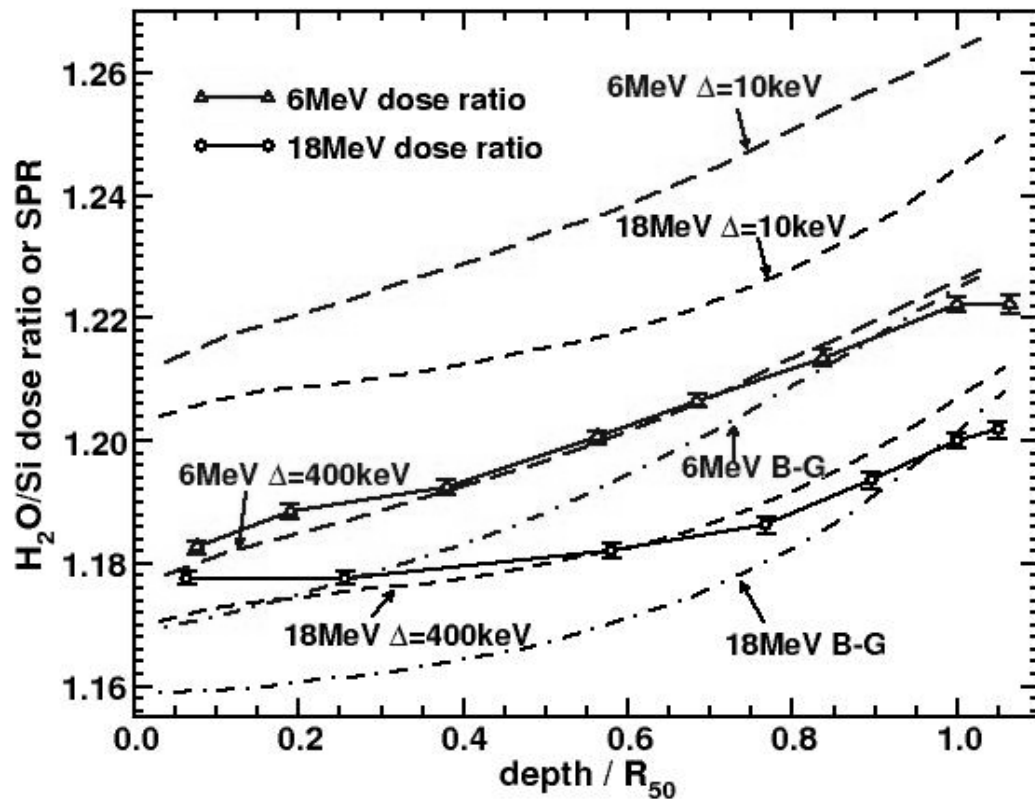
5) choose axis limits/forms to use area effectively



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

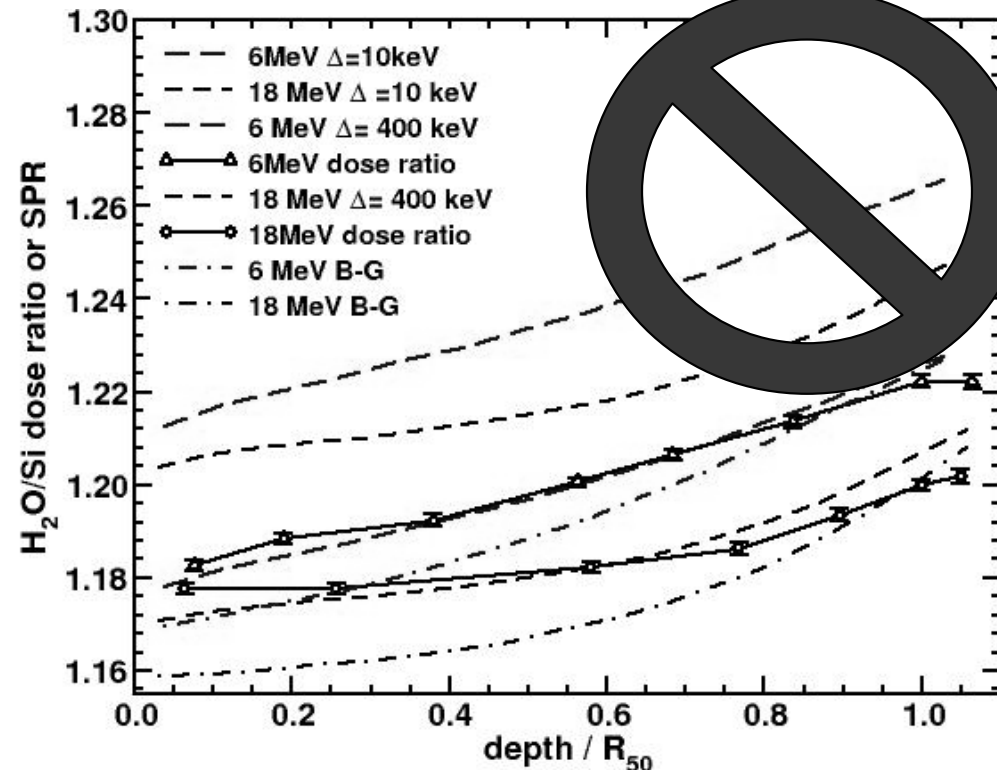


6) use arrows and labels rather than legends if possible

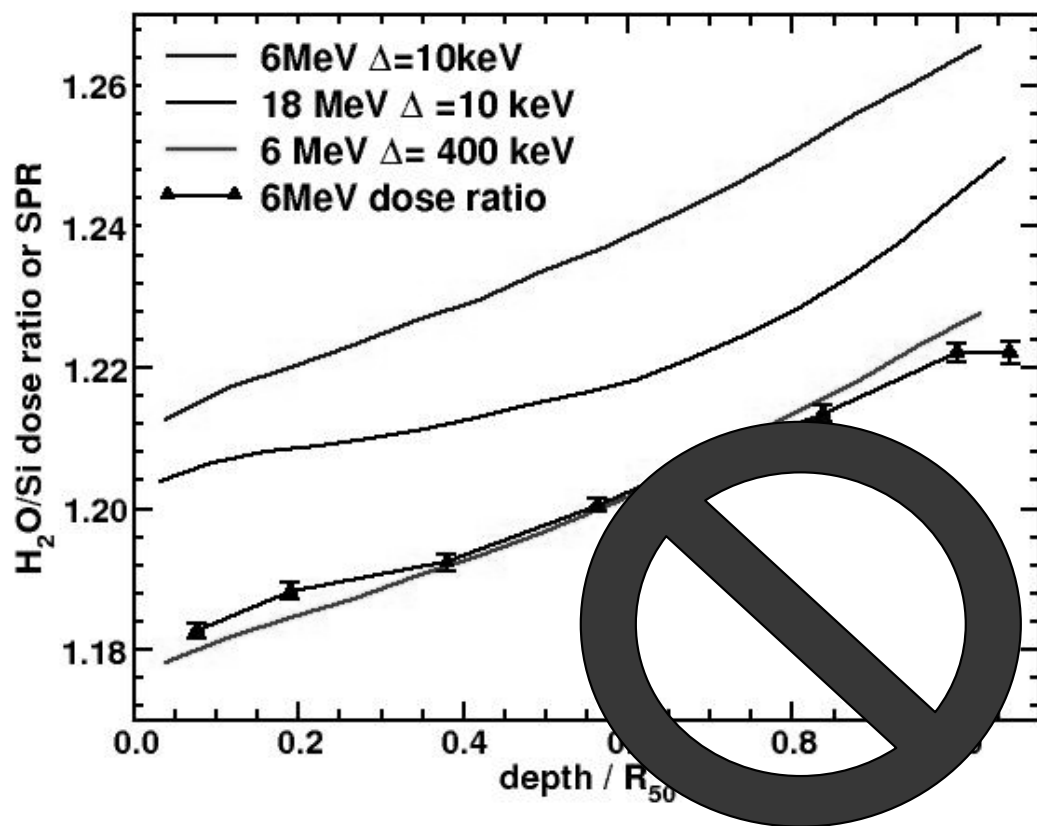


These are far too busy for use in a talk and possibly even in a paper

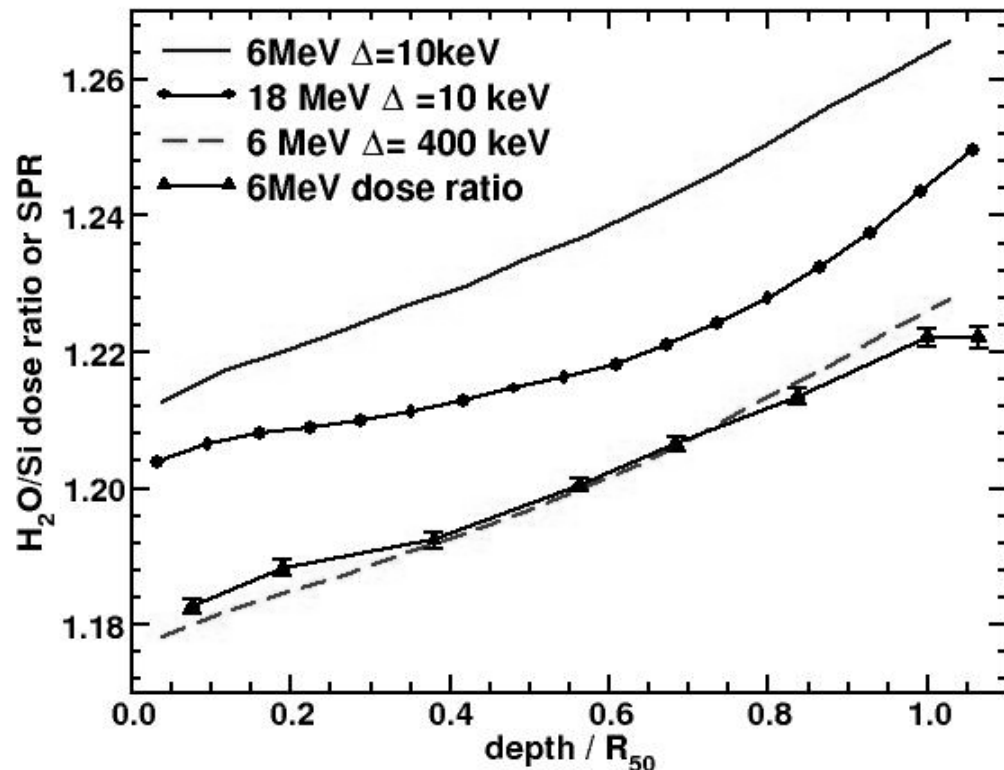
Added advantage: labels make the above work in black and white too.



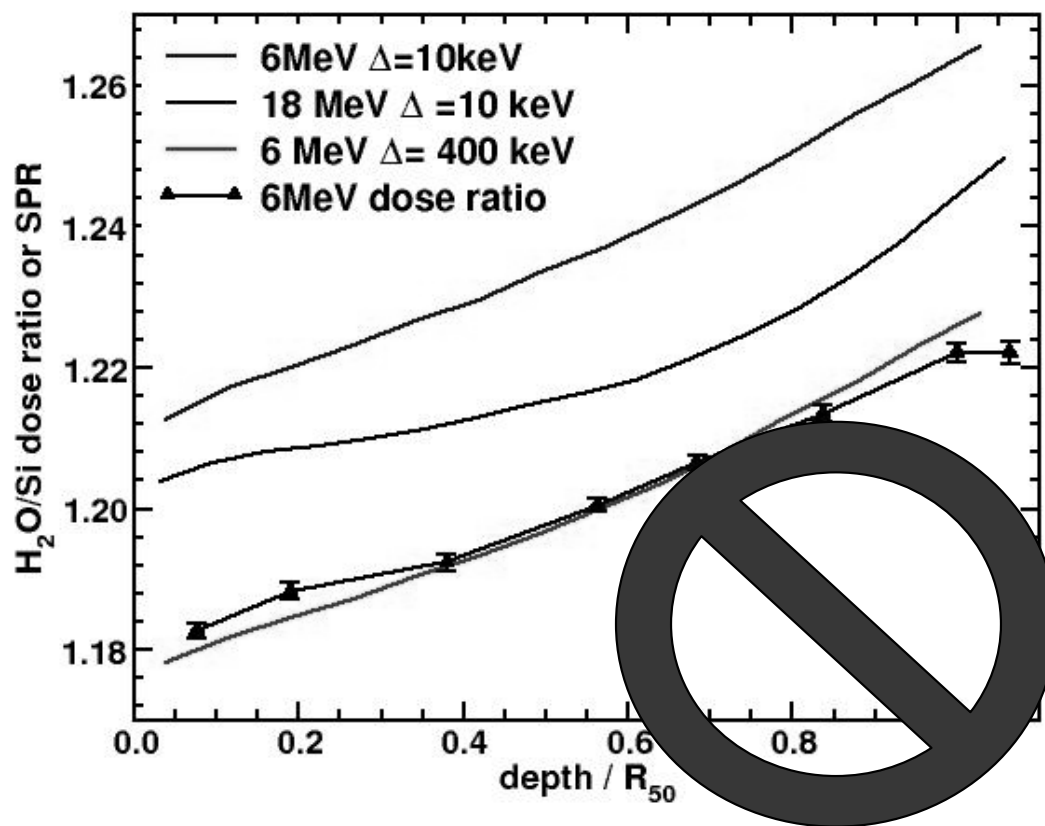
7) make symbols & lines work in B&W, even if colour used for on-line version (referees use B&W printers)



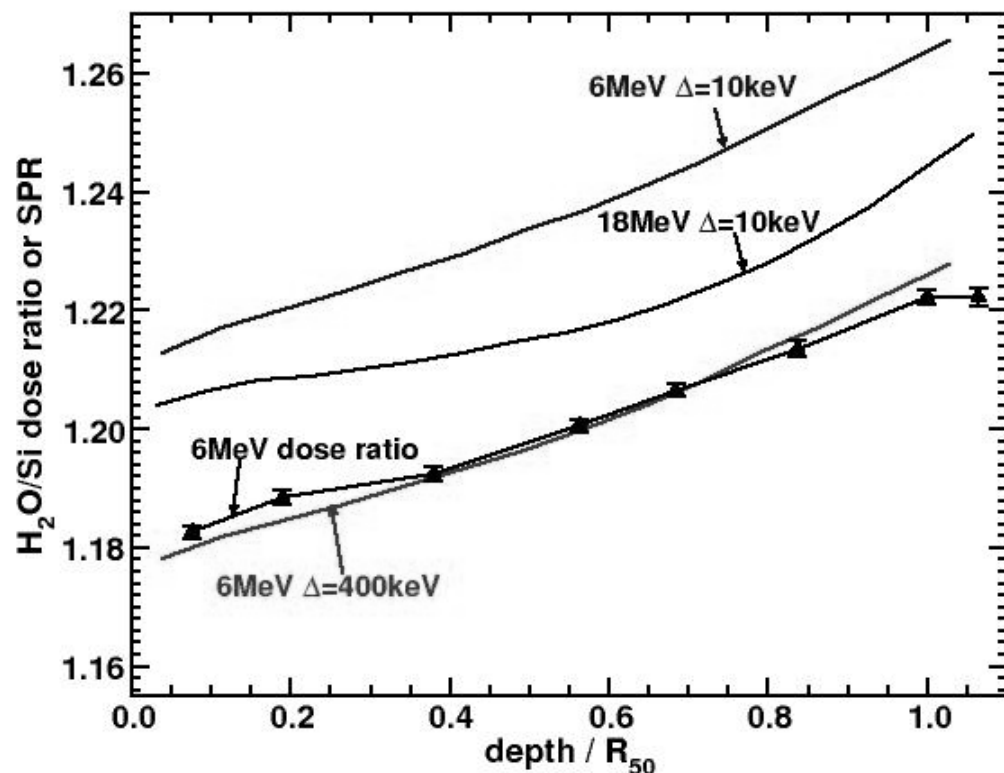
Use different line styles,
or.....



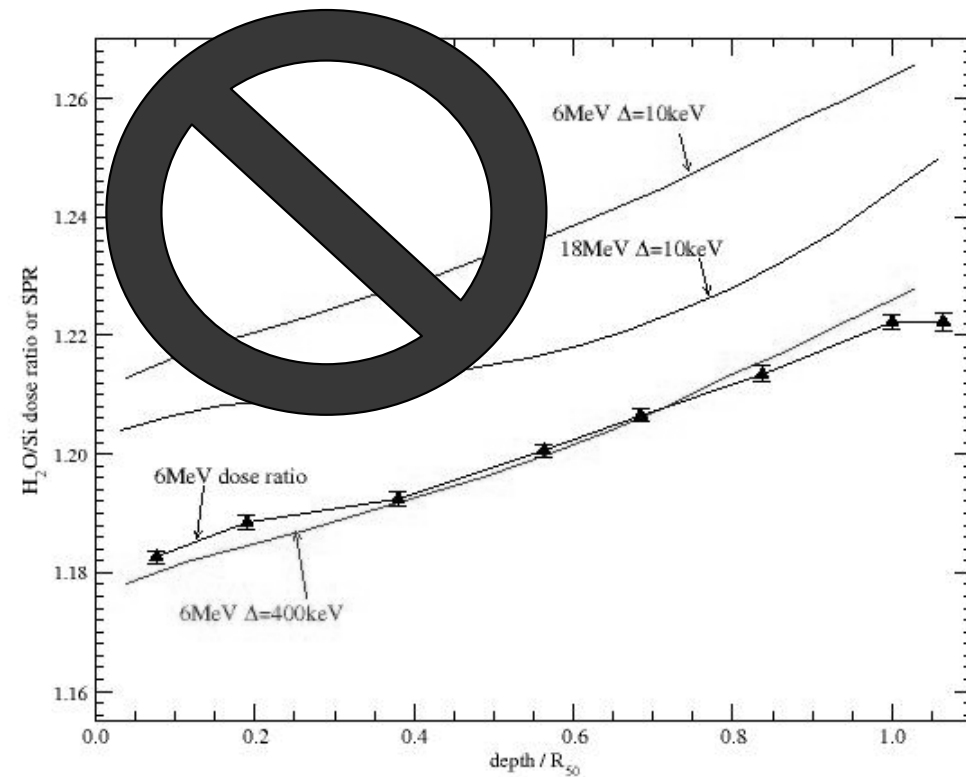
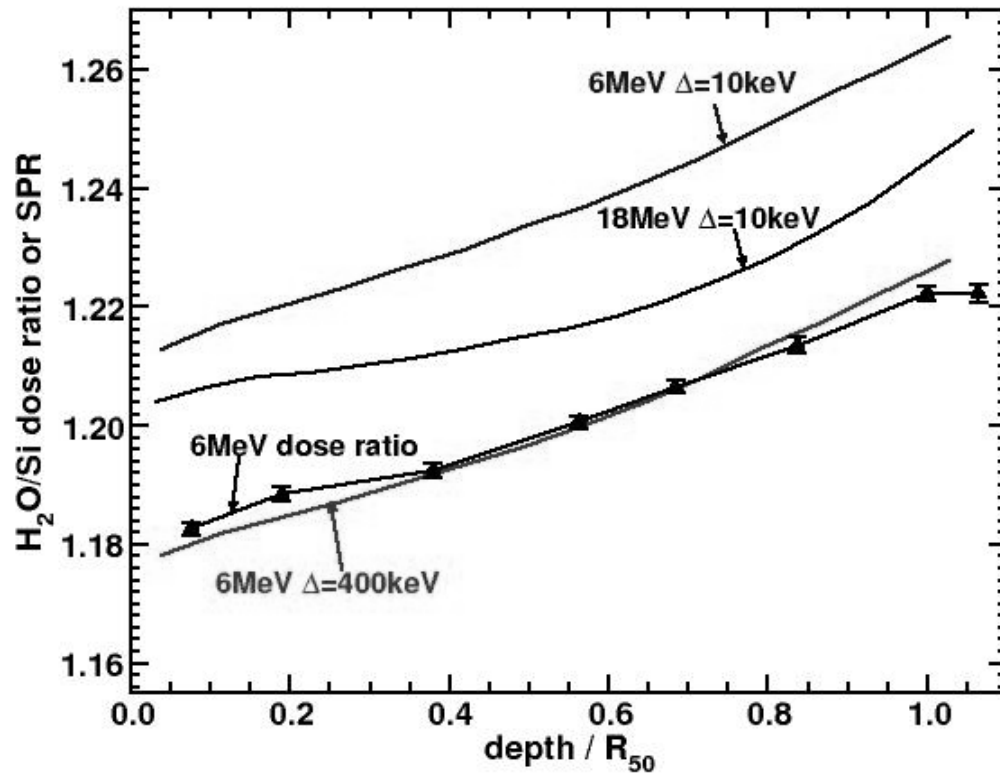
7) make symbols & lines work in B&W, even if colour used for on-line version (referees use B&W printers)



Use labels instead of legends

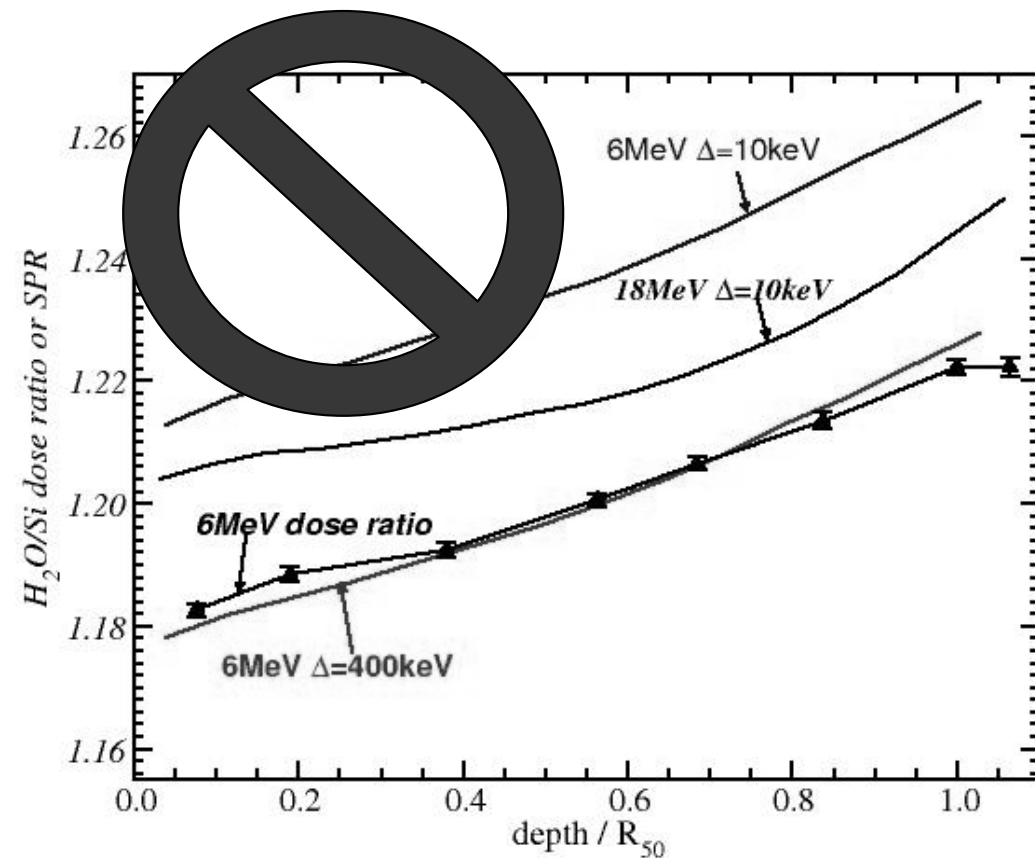
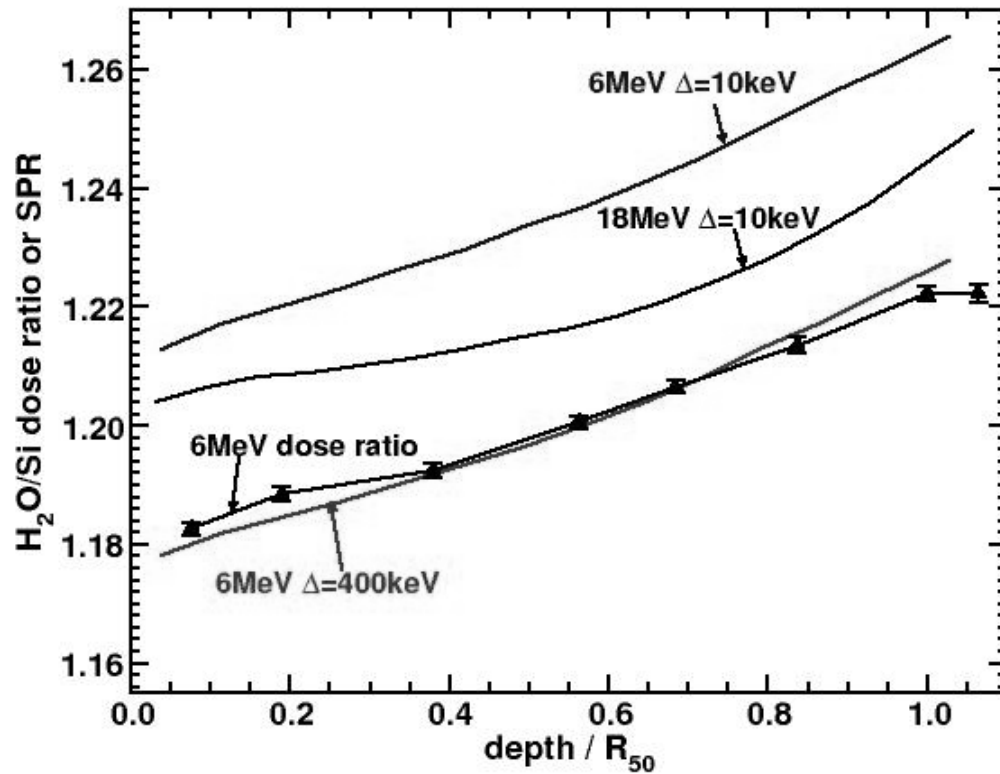


8) make sure all lines and font sizes are thick enough after reduction:

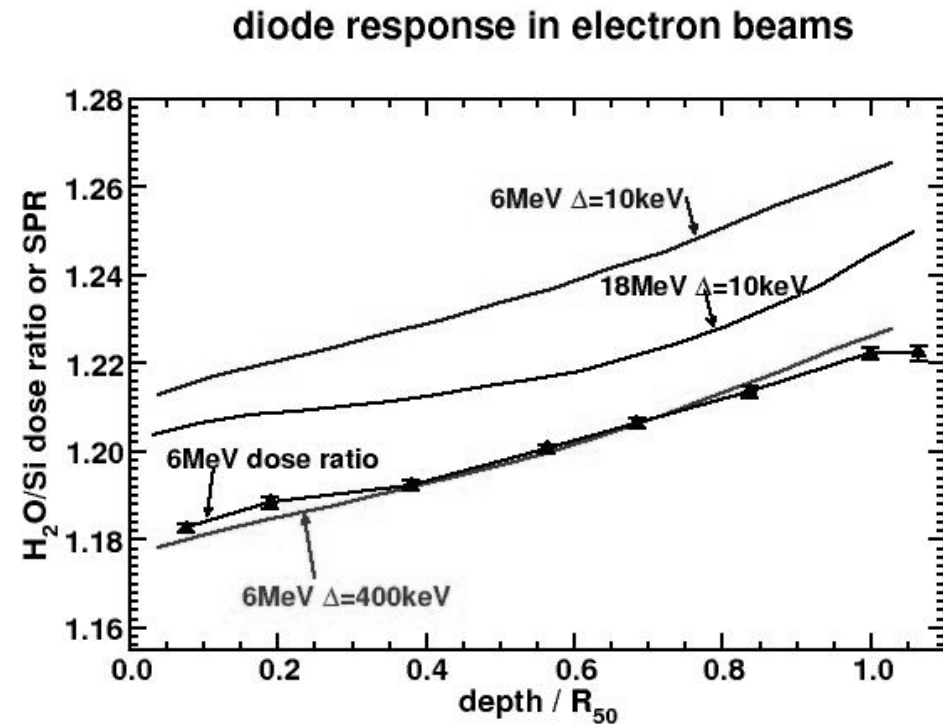
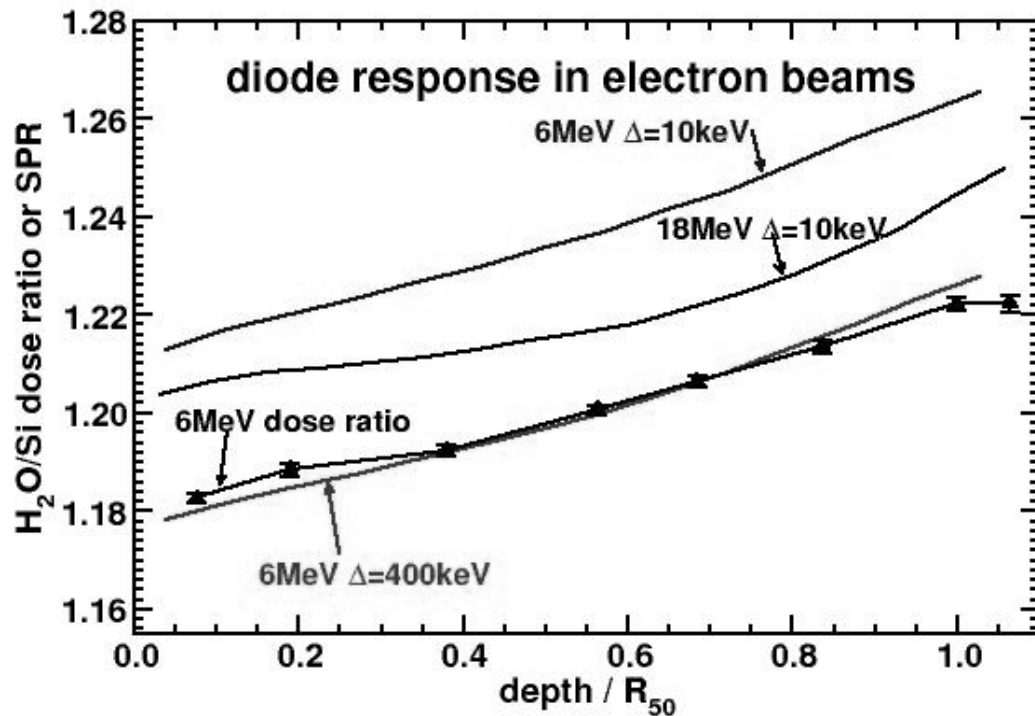


9) use a consistent, clear font

(I prefer helvetica or arial)



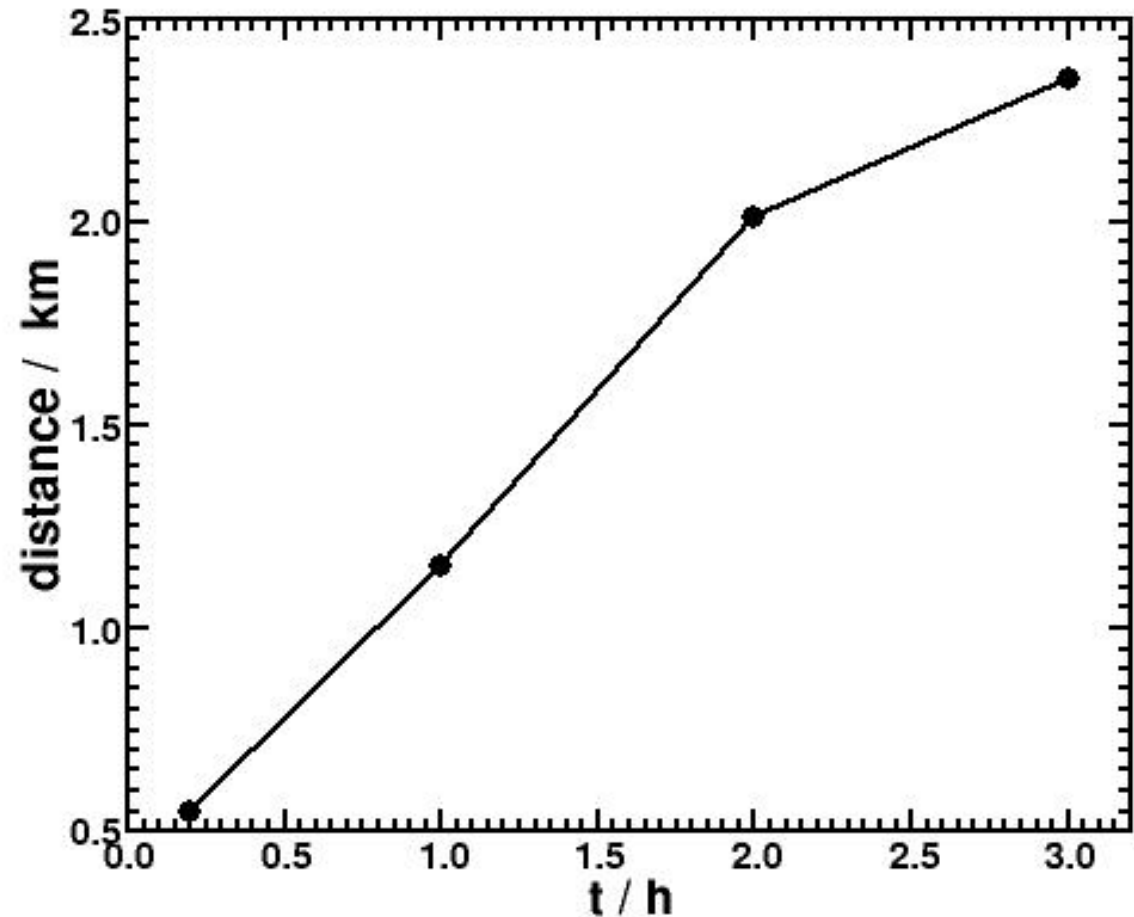
10) do not use titles/legends outside the axes



Graph on left makes far better use of the space

11) 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.

12) Captions should be self-contained

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

Thank you for your attention

Good luck with your next paper 😊

n) roughly square figures work best in Medical Physics journal

- Maximum width is about 8.7 cm = column width
- Height is adjusted as needed, but a tall narrow figure will be shrunk laterally.
- Determine best shape for a particular journal's layout.