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DESY.

How to give a scientific physics talk

(needless to say: this is very personal view...)

Presentation Skills Seminar, Summer Term 2024

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References

- R. Geroch, „Suggestions for giving talks“, arXive:gr-qc/9703019

- D. Tong, „How to make sure your talk does not suck“,
  http://www.damtp.cam.ac.uk/user/tong/talks.html

Foreword

- your talks are more important than you might think
  - a paper is often a joint effort (with collaborators) - the talk is only yours
  - non-experts are more likely to listen to your talks than read your papers
  - talks are an essential part of a job interview
- your talks strongly influence the image the community has of you
- make an effort to write the talk as clearly as you can
  - assign some extra time for it, do not rush - this is well worth it!
- make an effort to deliver it well -> practice
- be the best you can be

Before you start writing the talk

- decide which type talk - slides versus blackboard
  - never give a blackboard talk at a conference or in a colloquium
  - only in a one-hour technical seminar a blackboard talk can be nice
- calibrate the expected audience
  - this sets the level at which you should pitch the talk
  - determine what the audience knows (and you do not have to discuss) and what they do not know and therefore you have to explain.
  - I often adjust the talk when I am at the conference and „see“ the audience
- view the talk as an introduction to your work
  - start at lower level than originally intended, avoid technical details
  - do not only talk to the experts in the audience, transport the message(s) of your work

Writing the talk

- fix the number of slides at the beginning
  - determine how much time you need on average per slide and hen divide it by the total time you have
- choose an interesting title
  - avoid a question or a too technical title
- give a clear introduction
  - what is being done, why it is done, what the result is.
- embed talk into bigger physical picture - if you can
  - but start with topics you know well - ideally better than the audience
  - avoid getting derailed early on

Writing the talk

- do not give too many formulas/technical details
  - for that they can read the paper
  - instead stress the physical intuition and the physical reason for the result
  - if you give a formula, leave out irrelevant details (e.g. 16 π)
  - do not copy/paste from a paper
  - give only the idea and result of computations
- do not give full sentences
- do not tesselate the talk into too small steps - use blocks
- make slides look nice
- use readable colors
- do not overload the slide, they have to be read and absorbed by audience

Writing the talk

- think carefully which papers you cite
  - cite the important papers for your work
  - cite colleagues in the audience
  - cite your papers
- prepare extra transparencies in case you have time left
- prepare slides which you can leave out in case you run out of time
- summarize at the end
  - the audience should go away with a set of simple messages: your results
  - at a conference with 10-15 talks per day this crucial

Before you give the talk

- practise!
- think of the talk as a performance

  and of yourself as an actor who delivers the work
- reflect your gestures and body language

  you want to appear confident
- think about tempi and pauses during the talk
- if possible/appropriate think about 1-2 jokes
- dress well and conservatively
- prepare the room
- clean blackboard, check that computer works
- decide where you will stand

Giving the talk

- do not try to be cool - act like a serious, professional young researcher.
- appear to be enthusiatic about your subject - not bored
- speak slowly and clearly
- try to keep eye-contact with audience
- always use a pointer - and point at the screen
- do not constantly drink - only expresses that you are nervous

Giving the talk

- go slowly trough equations

  explain notation and all symbols used

- go at the pace you would have at the blackboard

  they have to read and understand what is written

- never ever go over time

  especially at a conference

  the audience is not listening anymore anway!

The Discussion

- keep in mind that now the more difficult part begins

  because you cannot prepare it

- answer clearly and concisely - if you can

- if you do not know the answer
  - answer a different question
  - have the question repeated or clarified.
  - it is legitimate to say „I do not know“ or „I have not thought about it“

- „When everything else fails, you can always tell the truth“ (A.Salam)

- never insult the audience - even if you feel attacked

Special remarks for defending a thesis

- The talk
  - state clearly what you did, what was known before and what your contribution is
  - think about who will be in the audience carefully
  - the audience are \underline{all} colleagues in building 2a
  - do not loose the audience on the first slide - especially your committee
  - in a thesis defense the „art“ is to take the audience along but nevertheless talk about your own (often technical) work

Special remarks for defending a thesis

- The discussion
  - keep in mind that now the more difficult part begins
  - try to answer clearly, go to the blackboard or point to the appropriate transparency. do not use just words.
  - if you did not understand the question you can ask.

Plan of the seminar

- 05.04., JL: „How to write a scientific paper“
- 12.04., JL: „How to give a scientific talk“
- 19.04., no seminar
- 26.04., Participant talk (20+5)
- 03.05., Participant talk (20+5)
- 10.05., no seminar
- 17.05., Participant talk (20+5)
- 24.05., no seminar

Plan of the seminar

- 31.05., Participant talk (20+5)
- 07.06., Participant talk (20+5)
- 14.06., Participant talk (20+5)
- 21.06., JL: „How to do a job interview“
- 28.06., Job interviews
- 05.07., Job interviews
- 12.07., Job interviews