

# How to give a scientific physics talk<sup>a</sup>

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<sup>a</sup>Needless to say, this is a very personal view... .

## References

- R. Geroch, “Suggestions for giving talks”, arXiv: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
  - they can be 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 ⇒ practise**
- ⇒ **be the best you can be**

## Before you start writing the talk

- **decide which type talk – sildes 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
  - do not use overhead/transparencies

- **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 then 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.  $16\pi^2, \dots$ )
    - ⇒ do not copy/paste from a paper
  - give only the idea and result of computations
- **do not give full sentences**
- **do not tessellate 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 transparencies 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 result

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 enthusiastic 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 through 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 anyway!

## 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)**
- **do not insult the audience – even if 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
- do not lose 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

- **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.