Introduction
Before the talk
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Some advice on preparing and giving talks

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http://www.normalesup.org/~benaribi/Talk_advice.pdf

This is a good place for your (Arxiv) reference!

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The importance of talks

Giving talks is a **crucial part** of research.

Today's Goal:
sharing **my biased point of view** and what **worked for me**.

My background: mathematician MCF, outreach, theater

Sources: Internet, advice from colleagues, academia life

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You may say I'm a dreamer

Imagine a world where **every presentation**

- finishes **on time**,

- is **understood** at $> 90\%$ by **everyone**,

- leaves the audience feeling:
  « That sounds **fun** and/or **interesting** »,

- is a **fun** experience for the **speaker** too.

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Today's main points

- The **reverse tree method** for structuring a talk

- Write the **main result** in the **first 5 minutes**

- **Simple** is best

- **NEVER GO OVERTIME**

- Dos and don'ts of **Beamer**

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Knowing the audience and adapting

- Find out the **levels** and the **research fields** of the audience.

- Identify your **goal**:
  - $\rightarrow$ sharing a fun result?
  - $\rightarrow$ teaching new stuff to the young?
  - $\rightarrow$ impressing professors?

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Structuring the talk : the reverse tree method

- start with the **endgoal** (often a recent Theorem of yours),

- then go **backwards** and write down the
  necessary preliminaries for the endgoal,

- keep identifying necessary preliminaries, **as far as needed**.

This will yield **most of the content** of the talk.

Finally, **order** the various parts and write down the details.

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It's never too simple

Audience is more often **lost by difficulty** than bored by simplicity.

- Use the **simplest examples** you can find.

- Even better, find **one example** to follow along the talk.

- Keep the **notations** and key results **visible** on the blackboard (the audience forgets quickly!).

- Consequently, plan in advance **where** you will write **what**.

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Timing

Rehearse. In true conditions (talk, write, erase).

Time yourself, as a whole and for **each part** of the talk.

Identify the essential results you **must** state, and how much time you need for them (thus, you know when to jump to the end).

Plan **5-10 minutes** for audience questions during the talk.

Plan **bonus stuff** if by chance you finish too early (rare).

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A digression on timing and respect

Giving a talk is an **honor** for you, the audience gives you one hour of their life, you must **respect them**.

NEVER GO OVERTIME.

If you missed the juiciest part, **too bad**.

As soon as you go overtime, you will **lose/irritate audience members**, even if what you say is brilliant.

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Presenting your work at a seminar or conference

This type of talk is a **teaser for your pre-print**.

Write the main result in the **first 5 minutes**.

Precise what results are **yours**.
It's not being pretentious, it's being **helpful**.

Similarly, give **references** for every other result.

Proofs are not necessary. But **rigorous definitions** are!

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Reading groups and workshops

Here you might have to present something **totally new** for you.

- First, **understand** the stuff **without thinking of the talk**.

- Find examples/comparisons that help **you** understand.

- Then, transmit **your comprehension of the problem**, maybe different from the paper/book!

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PhD defense

There are no hard rules. Discuss with your advisor.

- **My suggestion**: 10-15 min for the general public,
  25-35 min for mathematicians/computer scientists,
  0-5 min for the experts of your domain.

- Give **context** and keep things **simple**.

- Be **selective**, you cannot present everything.

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Beamer's advantages

- You can display **complicated pictures** faster.

- You can show **animations** or **videos**.

- You can present **more stuff** than with a blackboard.

- If your writing is **unreadable**.

- Some conferences are **Beamer-only**.

- The audience knows **what not to write**.

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Beamer's drawbacks

- **Notations** and **statements** of previous slides get **erased forever** and **easily forgotten**.

- You risk **talking faster** than the audience can **understand** or even **read**.

- Sudden **big walls of text** are **scary**.

- You risk being **static** and **lose the audience**.

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Beamer's Six Commandments

- **Max 7 lines** of text per slide. (Hence: **only pseudocode**!)

- Write **key words**, not full sentences.

- **1 idea** per slide.

- **Do not read** word-for-word what is written on the slide.

- **1-2 minutes** minimum of talking per slide.

- Use **bold** and color rather than *italic* or worse, no emphasis.

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Beamer's equipment

- **Laser pointer**, but do not abuse it, keep your hand still.

- **Long stick**, better than laser but too short for certain rooms.

- One **printout** of your beamer, so you don't get lost.

- **Blackboard** for **lasting** notations, statements.

- **Printouts of parts** of the talk, to give to the audience..

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Closing advice for Beamer

- Revealing slide parts **one after the other** can be more **audience-friendly**

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Closing advice for Beamer

- Revealing slide parts **one after the other** can be more **audience-friendly** or make them **dizzy**.

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Closing advice for Beamer

- Revealing slide parts **one after the other** can be more **audience-friendly** or make them **dizzy**.

- Use **both** the blackboard and the screen.

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Closing advice for Beamer

- Revealing slide parts **one after the other** can be more **audience-friendly** or make them **dizzy**.

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- **Rehearse** beforehand, with a timer and an audience.

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Closing advice for Beamer

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- Use **both** the blackboard and the screen.

- **Rehearse** beforehand, with a timer and an audience.

- On The Day, **test everything in advance** (computer, simulations, screen, lights, colors, sound, blackboard).

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$\geqslant 2$ shades of grey

- Other **revealing methods** for slide parts:

- Like this, everything after the current sentence is in **grey**...

- ... and eventually becomes black.

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⩾ 2 shades of grey

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$\geqslant 2$ shades of grey

- Or you could only emphasize the **current** sentence...

- ... and the previous ones go back to grey.

- You can also use **color** for emphasis.

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Several options for virtual talks

Share a **Beamer** ! Bonus : **share the file** with the audience !

Share a Beamer on which you can **annotate**.

Share **handwritten notes** (scanned or virtual).

Handwrite **live** on a software.

Film yourself writing on **paper** (with your **phone** or **webcam**)

Film yourself on the **blackboard** (risky quality!)

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Useful equipment

Laptop with **micro** and **camera**.

Headset with **good microphone** (avoid noise/echoes).

External Webcam (optional).

Ethernet cable (more stable connexion).

Graphic tablet and **stylus**.

Ask the **university** for this equipment!

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Speaking words, not only with the mouth

Talk **loudly enough**, and **louder at the end of a sentence**.

Avoid the terrible **monotonous tone**.

Diagonal chest: **Face the audience**, not only the blackboard!

Write up **your entire speech** in advance if need be.

No more than **1-2 consecutive spoken sentences**, and **no spoken math formula**!

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Handling stress

Take time to breathe. It just works.

People are **not judging you**, but trying to follow and learn.

Meditation, relaxation, theater... all can help.

When in doubt, **slow down**.

Imagine the worst possible audience reaction:
it's **not actually that tragic**.

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Answering questions

You can take some **silent** time to think.
Everyone will appreciate the breather.

Never self-deprecate yourself.

Be honest when you don't know, it often happens!

When questions or discussions delay too much,
take back the reins firmly.

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After the talk

Write down the questions from the audience before you forget: they can **help you for future research**, or **illustrate the confusing parts** of your talk.

If you want to get better, ask for **negative feedback** or **specific feedback**.

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Thank you for coming!

Questions, remarks and criticisms are all welcome.