



# La Silla Observing Summer School (2020)

## How to make good science presentations

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# Outline

- Why giving talks?
- Audience
- Design basics
- Talk structure
- Performance aspects



# Why giving talks?

# Why giving talks?

- Share your science results
- Catch up attention on our work
- Facilitates science collaborations

And important fraction of your time will be spent in attending to science conferences



# Audience

- **What do they want?**
  - People want to learn
  - People want to understand
  
- **What do you want?**
  - Reach the audience
  - You want their focus



# Audience

- **Adapt every talk to different audience**
  - Experts on your field
  - Scientists working on a different topic
  - General Public
  - Kids
  
- **What would you like if you were part of the audience?**

Present a well designed and organized talk adapted to the audience

# Design Basics

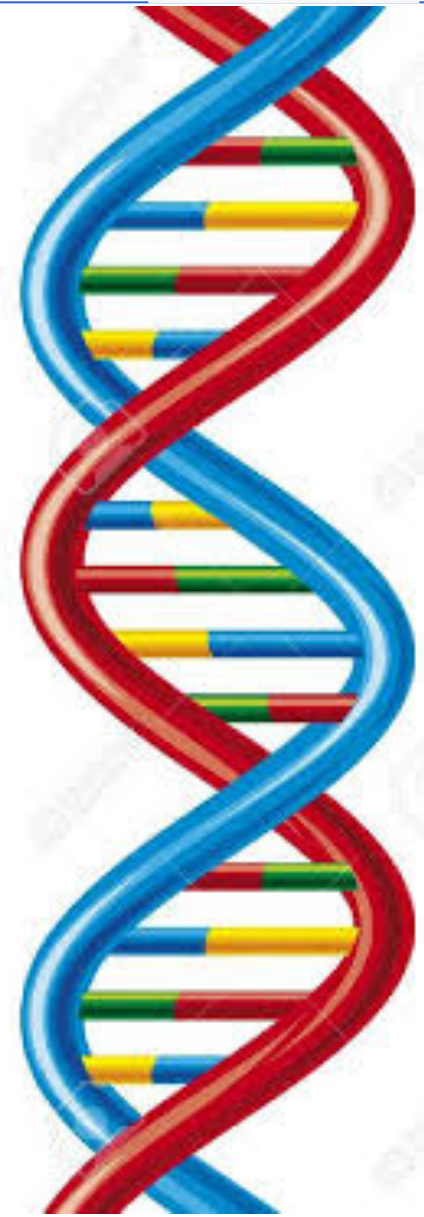
- **Color scheme**
  - Keep background simple



# Design Basics



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# Design Basics

## ➤ Color scheme

- Keep background simple
- High contrast with background
  - Light against dark
  - Dark against light
- Big rooms: better dark background
- Small rooms: better light background

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- Avoid red-green combinations (color blind people)
- Think always on contrast

# Design Basics

## ➤ Color scheme

I am color blind and I cannot see this

I am not color blind but cannot see this

- Avoid red-green combinations (color blind people)
- Think always on contrast

# Design Basics

## ➤ Fonts

### ■ Sans Serif fonts

- Have no marks on the ends of their lines
- Natural, simple, easy to read
- Usually seen as modern, sleek and clean
- Arial, Comic Sans, Times New Roman, Helvetica

### ■ Size

- Reach the audience at the end of the room
- 18 points or larger, **up to 36**
- For references no less than 14 points

# Design Basics

## ➤ Layout

- Headings: top. Simple sentence
- Use small text blocks (2-3 lines maximum)
- Short lists
- Be generous with empty space
- Be generous with boundaries

# Design Basics

## ➤ Style

- Audience: Readers vs visuals
  - Include a simple image per slide
  - Convolution of image, text and speech
- On average 1 slide/min
- Do not drown audience with data
- Avoid unnecessary long formula
- Delete excess text
- Avoid fancy transitions unless good reasons

Keep it simple. Less is more

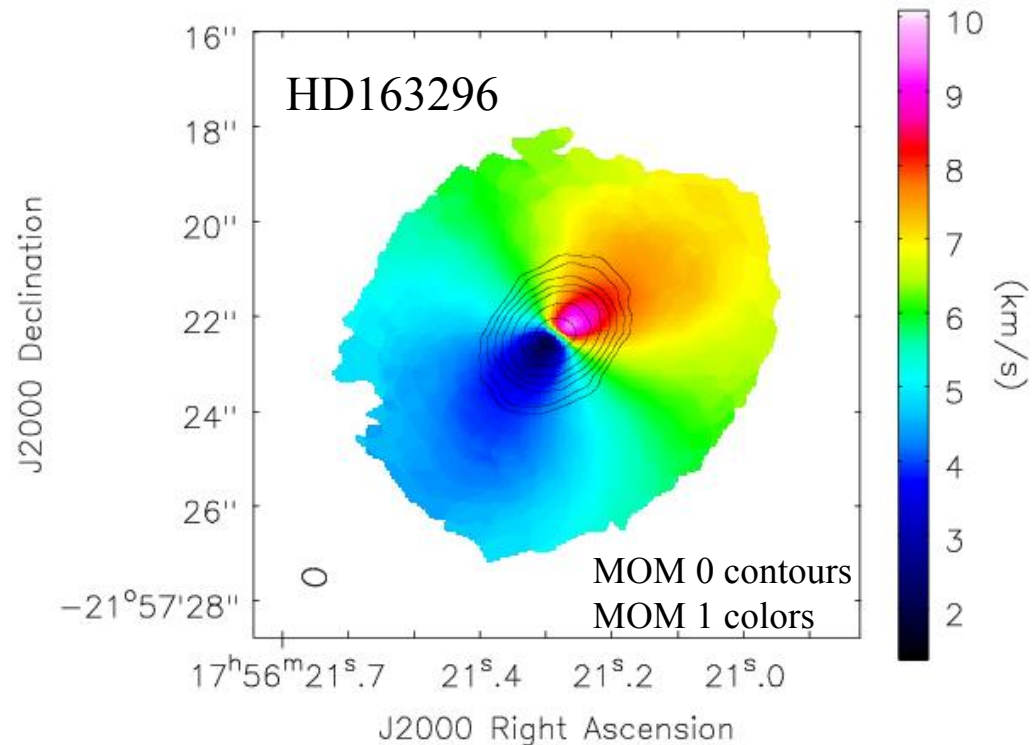
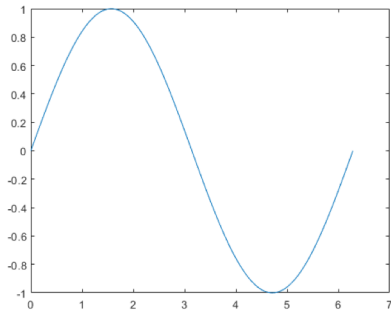


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  - Include axis information and title in the plots

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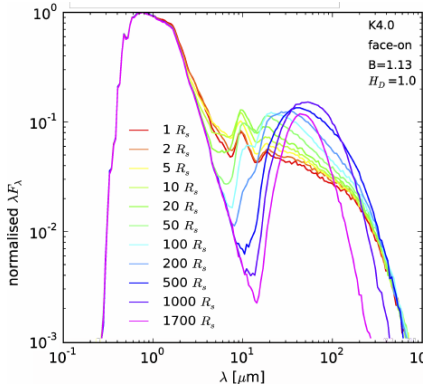
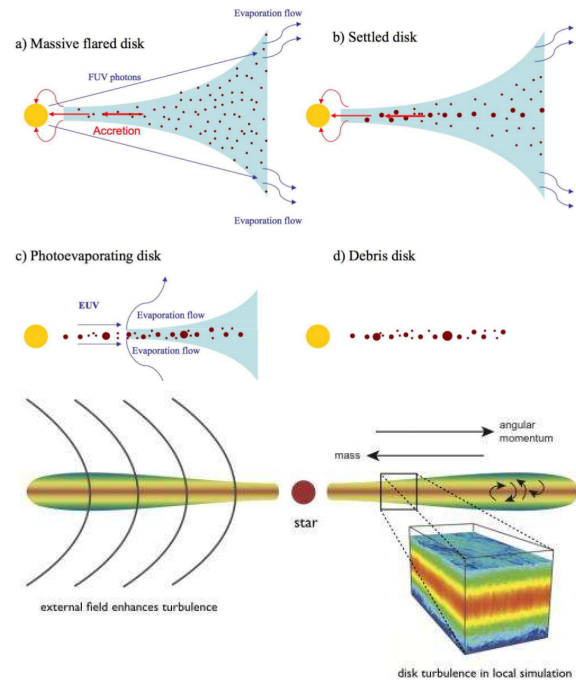
- **Some more details**
  - Include axis information and title in the plots
  - Movies: make sure they will work in the projection computer
  - Prefers pdf: it always work!

# Design Basics





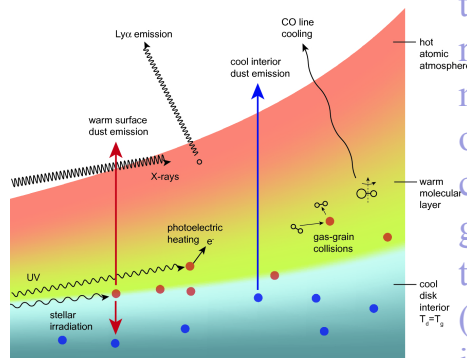
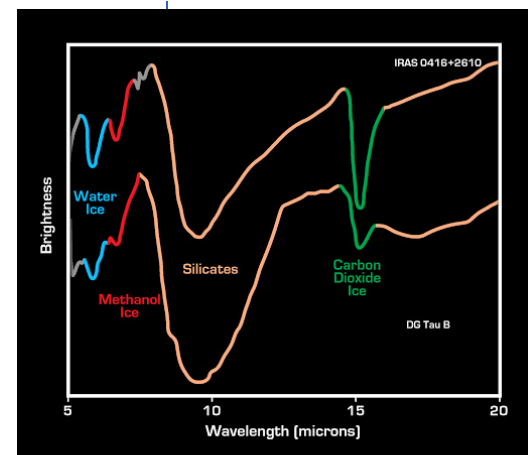
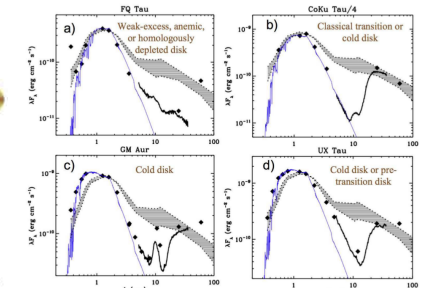
# Unveiling the gas-and-dust disk structure in HD 163296 using ALMA observations and theoretical simulations: changing paradigms of planetary formation



**Aims.** The aim of this work is to study the structure of the protoplanetary disk surrounding the Herbig Ae star HD 163296.

**Methods.** We used high-resolution and high-sensitivity ALMA observations of the CO(3–2) emission line and the continuum at 850  $\mu\text{m}$ , as well as the three-dimensional Monte Carlo radiative transfer code, MCFOST, to model the data presented in this work.

**Results.** The CO(3–2) emission unveils for the first time at submillimeter frequencies the vertical structure details of a gaseous disk in Keplerian rotation, showing the back and front sides of a flared disk. Continuum emission at 850  $\mu\text{m}$  reveals a compact dust disk with a 240 AU outer radius and a surface brightness profile that shows a very steep decline at radius larger than 125 AU. The gaseous disk is more than two times larger than the dust disk, with a similar critical radius but with a shallower radial profile. Radiative transfer models of the continuum data confirm the need for a sharp outer edge to the dust disk. The models for the CO(3–2) channel map require the disk to be slightly more geometrically thick than previous models suggested, and that the temperature at which CO gas becomes depleted (i.e., frozen out) from the outer regions of the disk midplane is  $T < 20$  K, in agreement with previous studies.



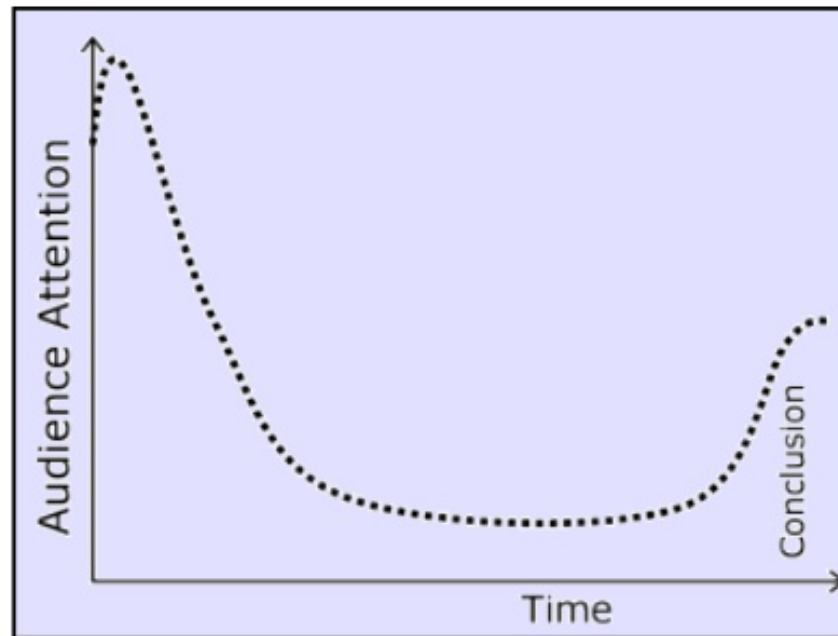
# Talk structure

- **Start with a very good introduction**
  - Provide background
  - Introduce the biggest questions
  - End focusing into your specific topic



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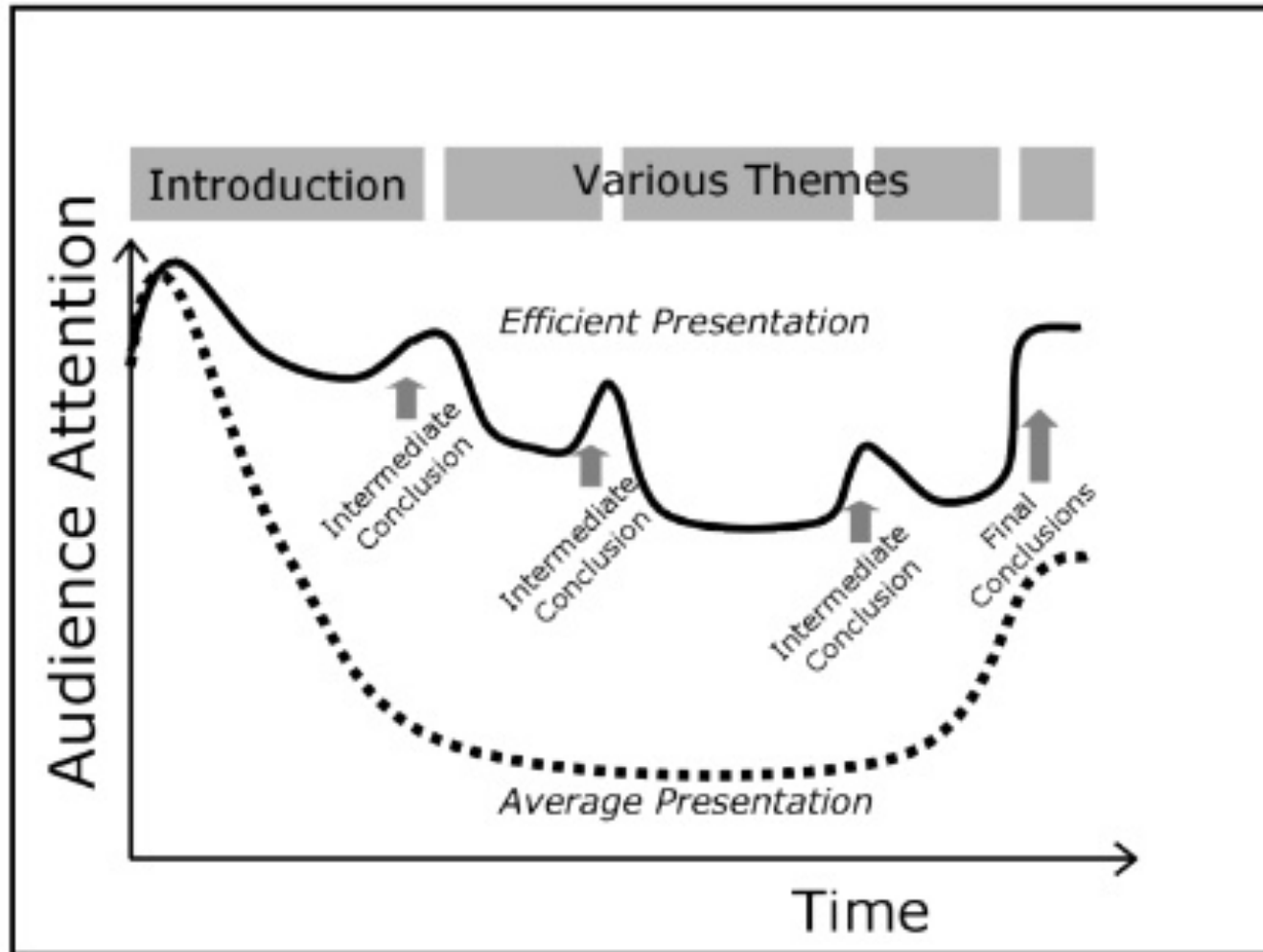
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# Talk structure

- **Start with a very good introduction**
  - Provide background
  - Introduce the biggest questions
  - End focusing into your specific topic
  
- **Present your results**
  - Follow the design basics
  - Build content progressively.
  - Provide intermediate conclusions
  - Enable the audience to tune back
    - Visual aids (images, colors)
    - Use outline for long talks

# Talk structure



# Talk structure

## ➤ **Conclusions**

- Last chance to revisit the big questions
- Last chance to reiterate specific conclusions
- Connect to the first part of the talk
  - Start specific, end broadly

Start broad, get specific, end broad

# Performance aspects

## ➤ Factors “against”

- Different cultures, different styles
- Non native English speakers
- Some countries train very well in oratory, others do not.
- Fear of public speaking
- Impostor syndrome
- Unconscious bias



# Performance aspects

## ➤ “Mitigation” factors: attitude

- Be comfortable, be authentic
- Do not be rude
- Control the time in advance
- Stand still
- Tell a story
  - Engage with a conversation with the audience
- Be enthusiastic: get passionate, get excited...you are presenting your work!!
- It is infectious!.





# ...and very important

- Rehearse
- Rehearse
- Rehearse
- Rehearse



Practice a lot and ask for feedback to your colleagues

# Conclusions

1. Present a well designed and organized talk adapted to the audience
2. Keep it simple. Less is more
3. Start broad, get specific, end broad
4. Practice a lot and ask for feedback to your colleagues
5. Tell a story and be enthusiastic