INAF
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DI ASTROFISICA

My Academic Journey

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MOST PAN

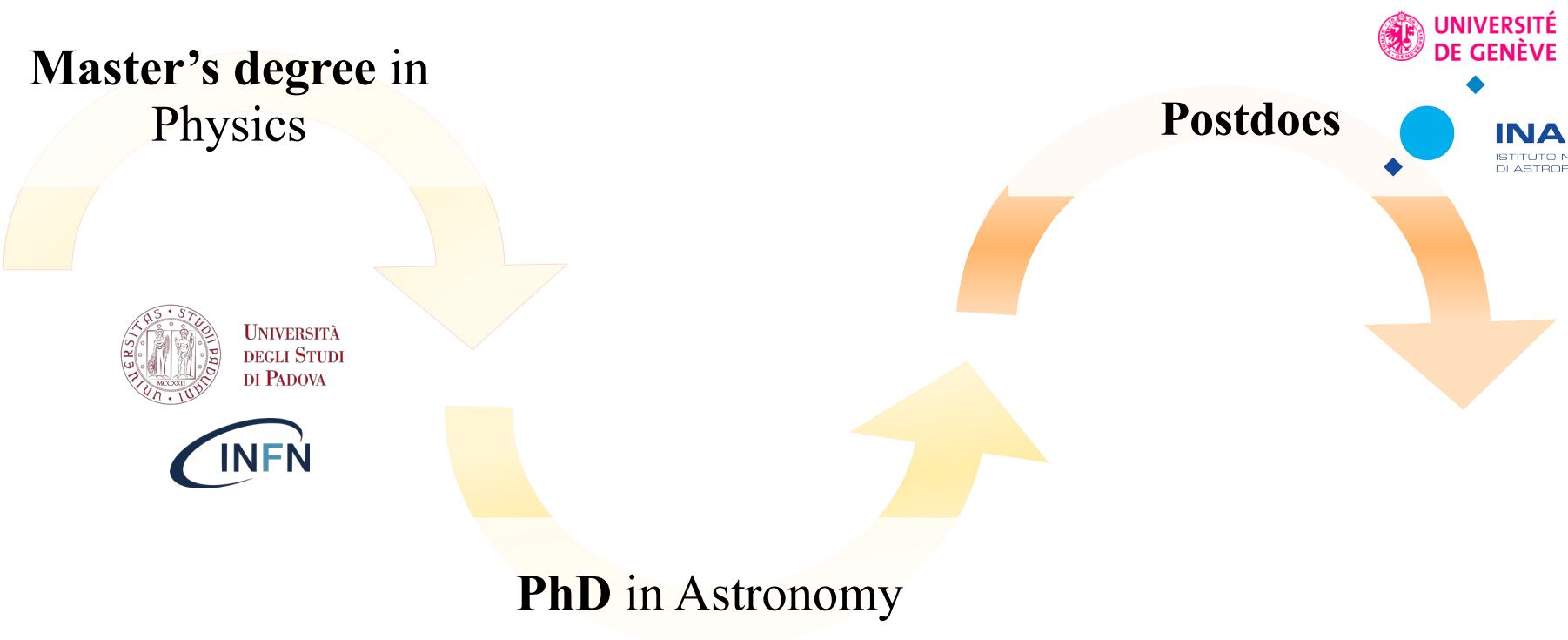
"Our Future in Research: Physics, Collaboration and Careers Across Europe"
Institute of Nuclear Physics PAN, Krakow, Poland - 30/10/2026

Overview

1) What I Do: My research today
2) How I Got Here
3) The PhD Years: Opportunities and unexpected turns
4) Life as a Postdoc: Opportunities and uncertainties
5) Lessons learnt: A few tips I wish I had known earlier

My Academic Journey

An academic career is not a straight line. It is a series of opportunities, decisions, unexpected turns, and people who influence your journey.



My Science

Scientific Activities

High-Energy Astrophysics:

- Theory, modeling, and interpretation:
  - **Extreme particle acceleration processes** → leading the most extreme processes in the Universe

    → **Active galactic nuclei (**especially Blazars**), gamma-ray bursts, neutrinos**
- Data Analysis and software development: very-high-energy and high-energy **gamma rays (+….)**

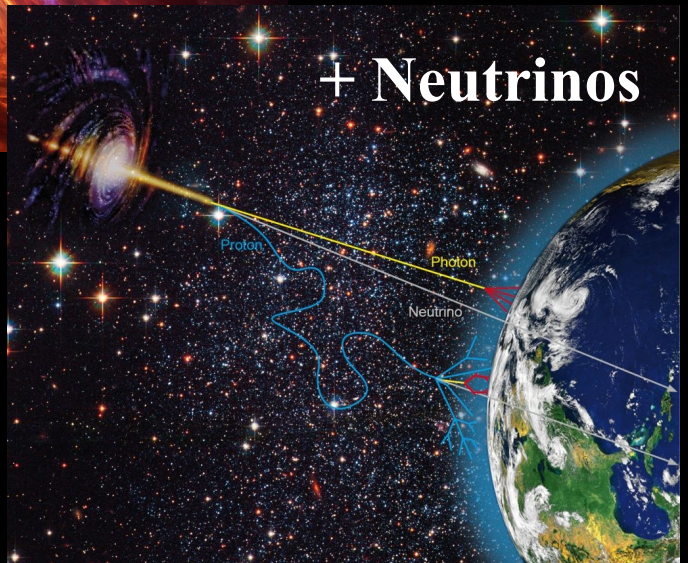
Current roles within major international collaborations:

- Coordinator of the Extragalactic Science wg and of the wg on Extreme Blazars [MAGIC]
- Coordinator of the Data Quality working group [ASTRI]
- Scheduler for night observations [LST-1]

Active Galactic Nuclei

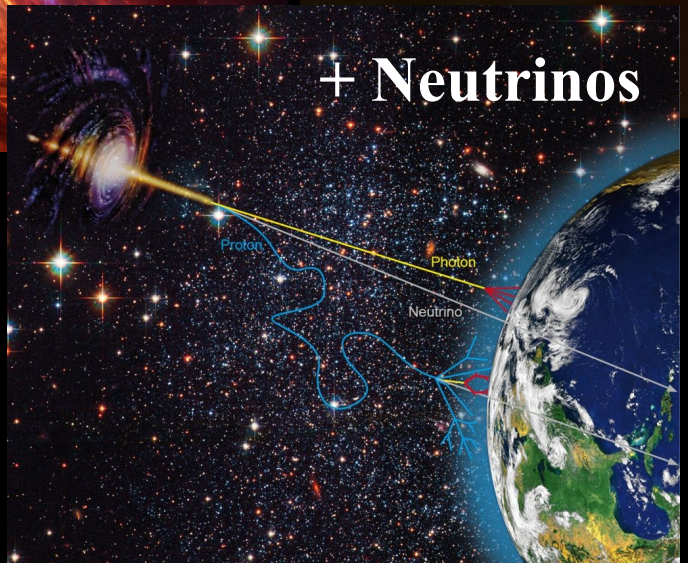


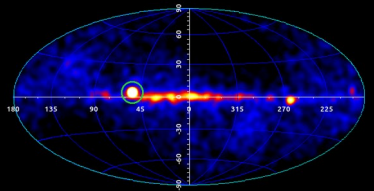
Active Galactic Nuclei



Active Galactic Nuclei

Gamma-Ray Bursts





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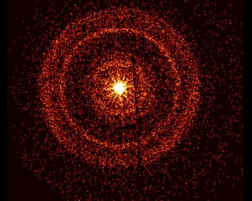
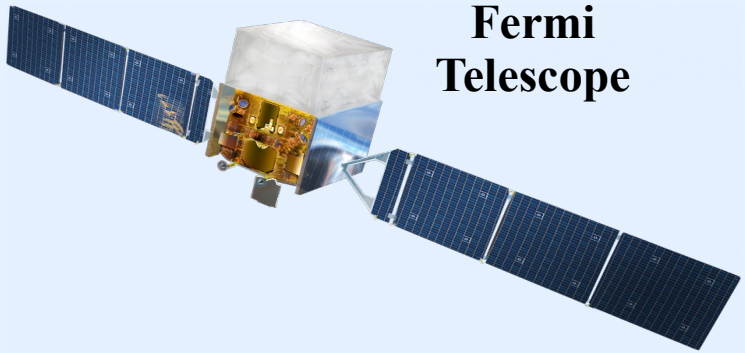
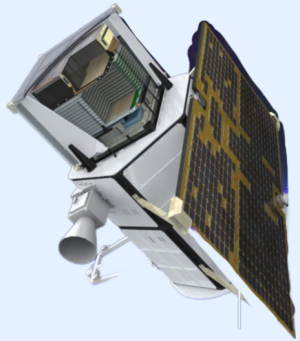


We Also Need Data

Medicina radiotelescope



Fermi
Telescope



AGILE
telescope

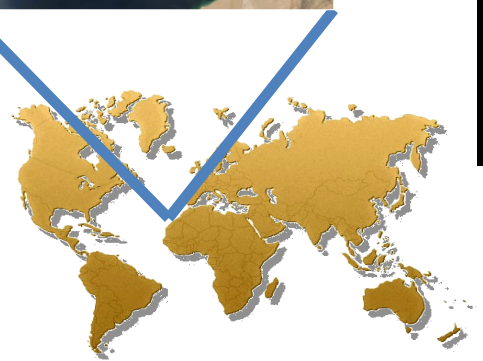
LST-1 (CTAO)
Telescope

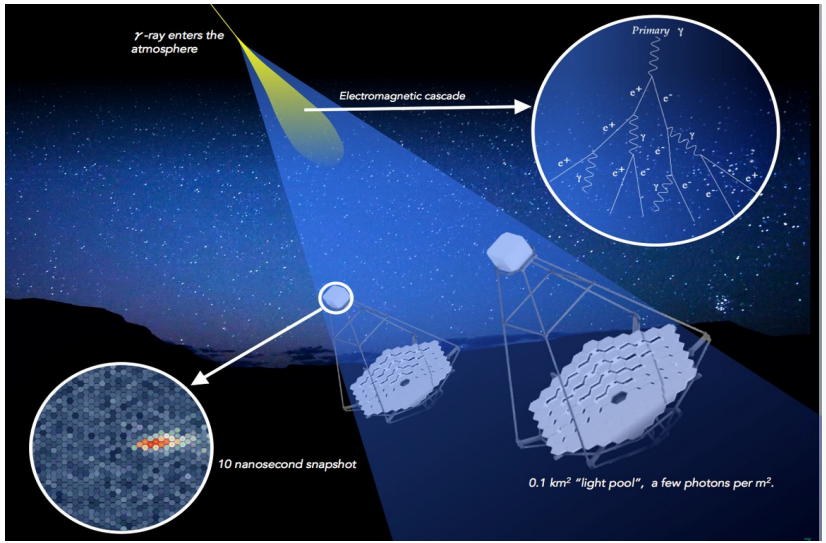
MAGIC
Telescopes

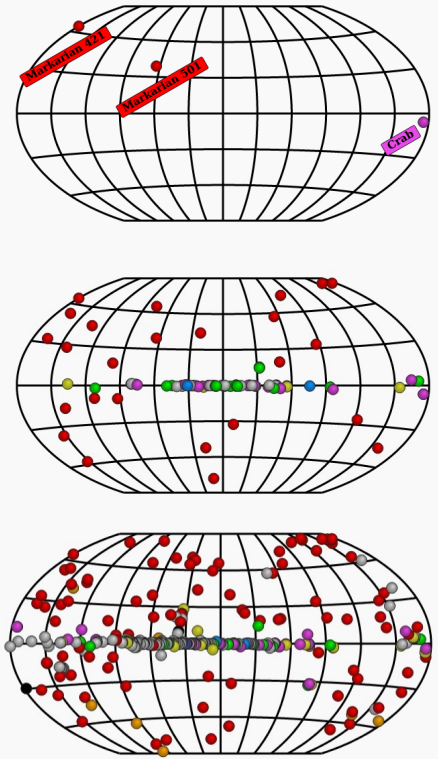
An Example of Cherenkov Telescopes: MAGIC











1996
3 sources

2008
59 sources

Today
337 sources

Credits: TeVCat







My Academic Journey

2011-2016 **Bachelor's and Master's degree in Physics** → science is hard, but it opens your mind

1) Bachelor's Thesis on **High-Energy Relativistic Astrophysics –** *Fermi*-LAT → I wanted to graduate quickly, but it turned out to be part of my future

2) Master's Thesis on **Cosmology** → I was fascinated by Cosmology, but did not like working on hit

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2016-2019 **Ph.D. in Astronomy → the best period of my life**

Unexpected acceptance!

My supervisor put me in contact with the group working on MAGIC telescopes, that I was not aware of.

Many opportunities, travelling a lot!

The Unexpected: A Short Story

Sometimes opportunities are totally unexpected

In 2017, for the first time a neutrino was detected from the direction of a flaring blazar.

I was doing a duty work on an apparently boring “hopeless” analysis of a common transient event, but I actually found signal (gamma rays from the same direction of the neutrino).

People were astonished and asked us to do tons of tests.
For 9 months.

Published in Science, huge publication led by IceCube. We were contact authors for the MAGIC Collaboration.

It became half of my PhD Thesis.





If I were starting my PhD again...

Would I re-do my degree and my PhD?

Yes, 10^3 times

- personal satisfaction
- international experiences
- scientific opportunities



When I started my PhD, did I know what I would be doing 10 years later?

Absolutely not.



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My conclusions about the PhD:

- *Your PhD topic does not define your entire career* → ✅ ⚠️ true, but it is difficult to change much
- Gradually broaden your expertise!
- *Sometimes you get lost, you do not know what to do* → Do what you like, but also what you need to progress with your career
- *Learn to make yourself visible* → True ✅

What I wish someone had told me during my PhD

“Publish or Perish!” → not true, not anymore, not like that at least
In our field, it depends what you do. People in large collaborations may find it difficult to publish.
The idea is: publishing is important, but you also need to get experience required by the current main ongoing projects in which you would like to be involved

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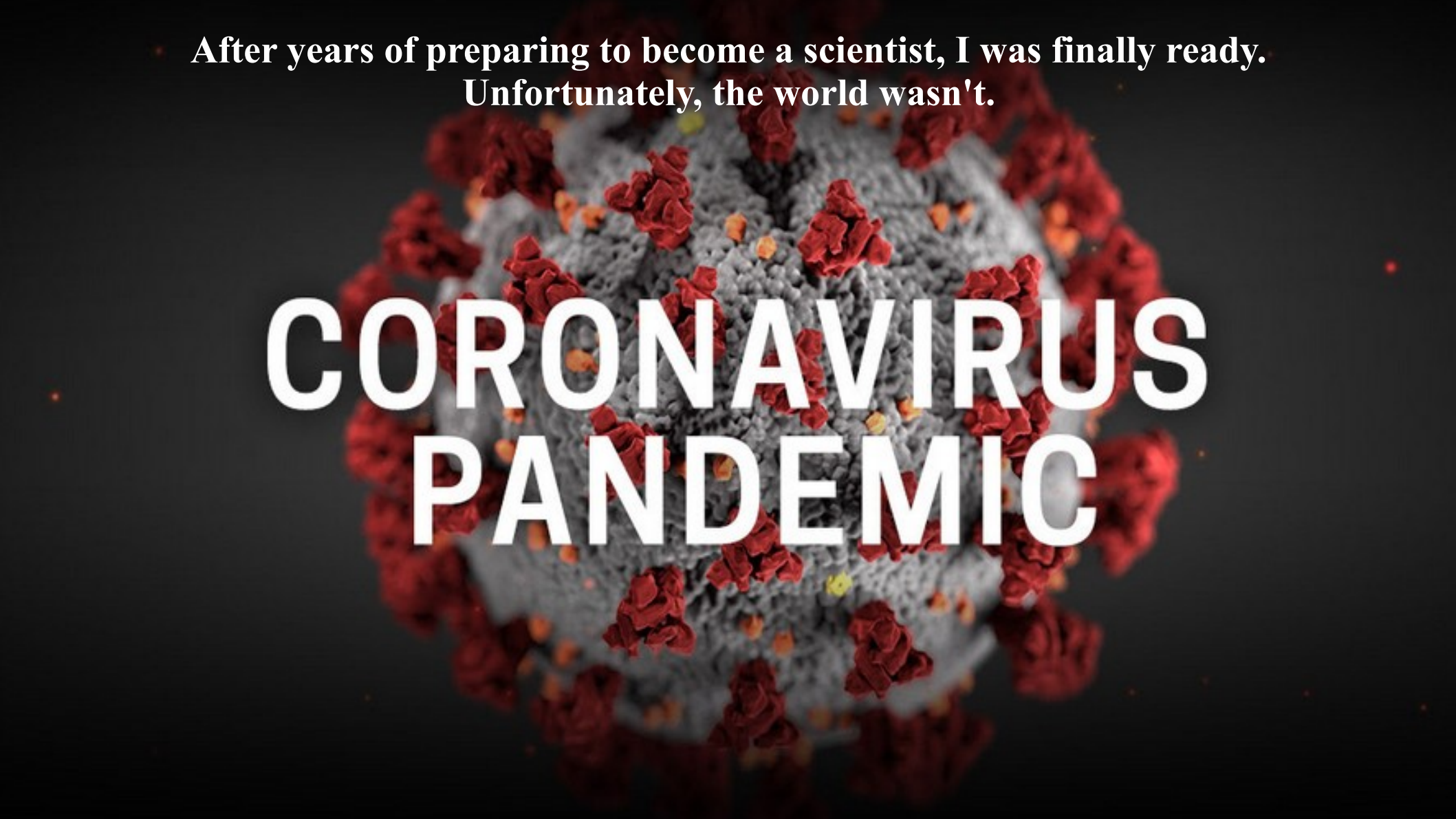
Guess which are the good trains for your future

How to make **applications** (there are many types… national/international/EU…) → See talks by Bartlomiej

“Should I stay or should I go?” Research vs Industry. Personal choice, based on your motivation. My impression is that is something you need to choose rather soon in your career

Worried about money?
My personal tip: Money is important, but experiences are more importanter :)

How did my accademic journey start?


After years of preparing to become a scientist, I was finally ready.
Unfortunately, the world wasn't.
CORONAVIRUS
PANDEMIC

How did my academic journey start?

What after PhD?
I wanted to continue with Science

Summarized view:

2020-2021 **Postdoc** at the **University of Geneva**
I mostly did software development and data analysis, but I got too far from Science

2021 - **Researcher (ft)** at **INAF** (Rome)
I do many activities, very concerned about Science

2026- **Ongoing Master's course in "Space Mission Design"**

Detailed view:
Postdoc at the University of Madison, Wisconsin (2026 Nobel Prize!) → I had to turn down...
Postdoc at the University of Geneva, Switzerland → I accepted
[...]
Among others...
Postdoc at the Istituto de Astrofisica de Canarias, Spain → I had to turn down
Postdoc at INAF → current position (even though in the meanwhile I won several applications to "improve" the contract (italian system can be complicated…)
[...]

My Recomendations

Non-negotiable:

- Study
- Work hard
- Publish, but also present your work at conferences!

Strongly suggested:

- Talk with people: opportunities arise also from people you do not meet often
- Get international!
- Big results are a step-by-step procedure. You need to get trained and face with rejections
- Awards – prizes - grants look great on your CV. Helpful, but not everything.

Plus:

- Organize conferences
- Outreach
- Teaching





ICRC2023, Nagoya, Japan



A few tips

Seek different perspectives

E.g.: Physics has changed a lot in the last 40/50 years

→ **Older people** are surely important containers of experience, but in some occasions they rely on approaches that are no more applicable to the new era of Science (high competitiveness, many projects, unclear trend between multi-disciplinarity and extra specialization)

→ **Younger people:** success results from hard work and opportunities (luck!), and consequently all stories are different

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Think internationally

Many opportunities when you are available to go abroad and switch frequently

Difficult to get a stable position, everywhere.

Pro and cons: family/life choices

Define your own future

Start deciding what you want your future look like:

- personal and professional desires
- among many applications, you may choose the ones that better fit with your desiders


Why do all this?
Because sometimes, the view makes it all worthwhile.
Thank you!
La Palma,
Canary Islands