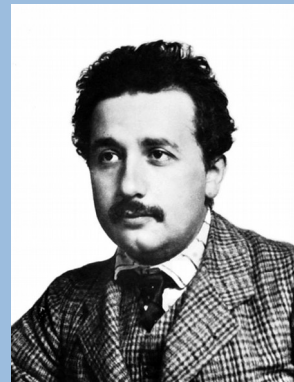
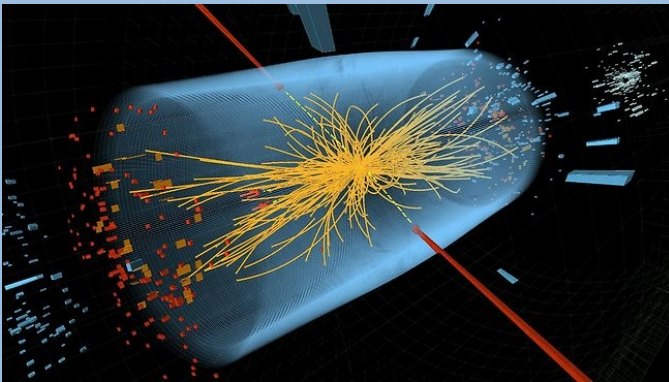


# Grad students' opinion: “What it means to be a PhD student in Switzerland”



Martti Nirkko

RECFA meeting, ETHZ

1<sup>st</sup> April 2016

# Typical path to PhD in Switzerland

- > **Bachelor** studies: 3-4 years – requires “Matura” (A levels)
  - Basic courses, general topics, some lab work
  - Examples: Electrodynamics, Elementary particle physics
  
- > **Master** studies: 1-2 years – requires BSc degree
  - Advanced courses, specialised topics, lab work or exercises
  - Examples: Quantum Field Theory, Detector physics
  - Master thesis is significant part (45 ECTS @UniBE)
  
- > **PhD** studies: 3-4 years – **requires MSc degree!** 
  - Few courses, seminars, mainly research
  - Focus on very specialised topic
  - Gain international experience

# Living in Switzerland

- > The **cost of living is very high** in Switzerland. This can be intimidating to potential applicants.
  - Price depends on city, living situation, costs of health insurance and personal lifestyle
  - ETHZ guide: monthly expenses ~**2250 CHF** (2050 EUR)
  
- > Luckily for us, the **wages are also very high**...
  - Wages depend on university, institute, exact position, age and experience and often also the source of the money
  - SNF (4 years): monthly average ~**3760 CHF** (3430 EUR)
  - Foreign employees are taxed up to 30% at source, which would leave them with more than ~**2630 CHF** (2400 EUR)...

# Personal opinion

- > PhD student in neutrino physics at the T2K experiment. Currently finishing thesis, should defend in 3 months.
- > **Pros**
  - + Experience in an international collaboration
  - + Lots of opportunities to travel (meetings, conferences)
  - + Great community, like-minded people
  - + Possibility to work from home (data analysis)
- > **Cons**
  - Small local group working on different topics
  - Hard to obtain expert advice on technical issues
  - Discuss research mostly online (phone meetings)
  - Productivity can depend heavily on Post-doc

# PhD student survey

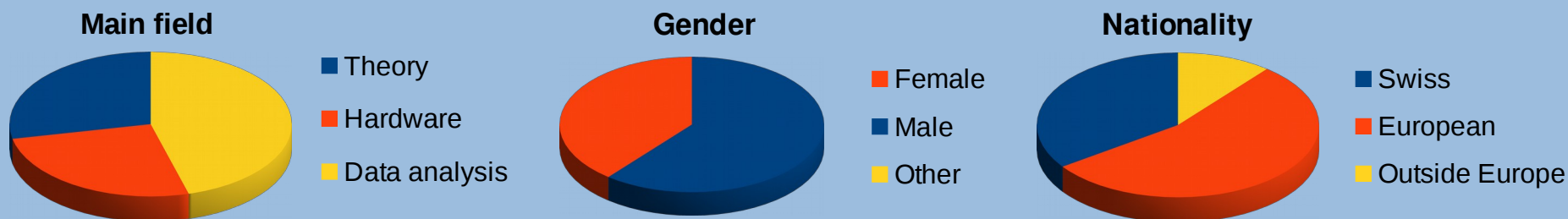


- > Performed an **online survey** among registered CHIPP PhD students and recently graduated (<5 years) PostDocs.
- > Requirement: PhD obtained at a Swiss university
- > Obtained **46 responses** (42 active, 4 graduated) in ~1 week
- > Survey contained **24 questions** (excl. demographics)
  - Free version of SurveyMonkey allows only 10 questions
  - Had to use “hack” to fit in all questions
  - This is typical PhD student behaviour...



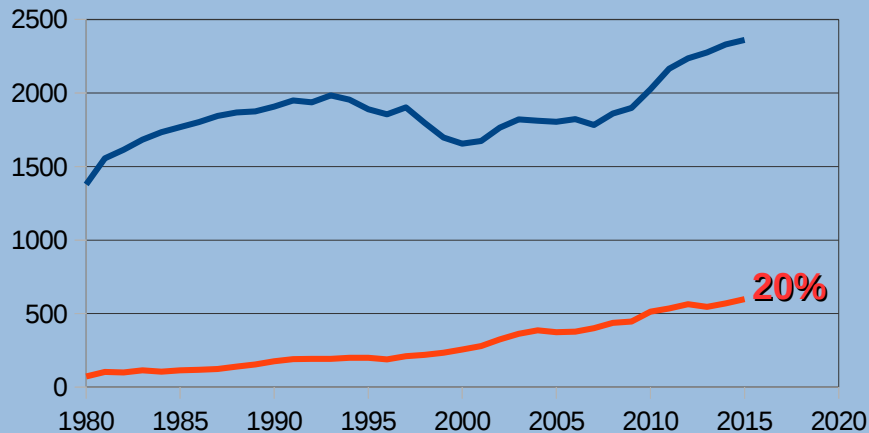
# Demographics of respondents

> Physics still heavily subject to gender bias!



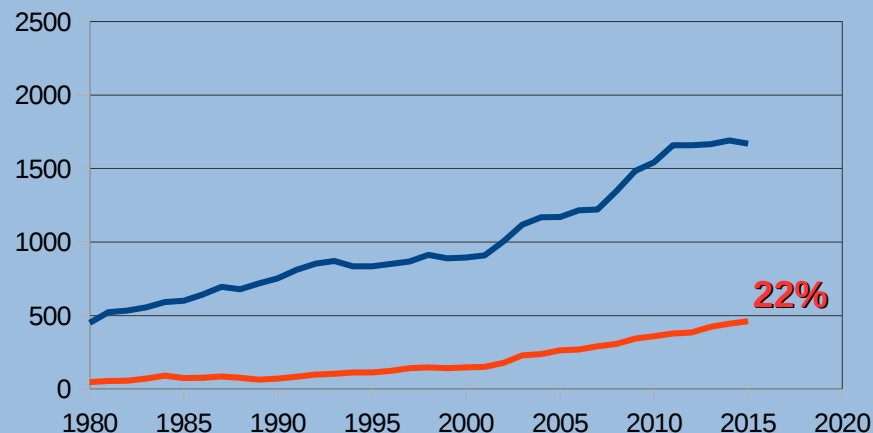
Undergrad students (physics)

Source: <http://www.bfs.admin.ch>



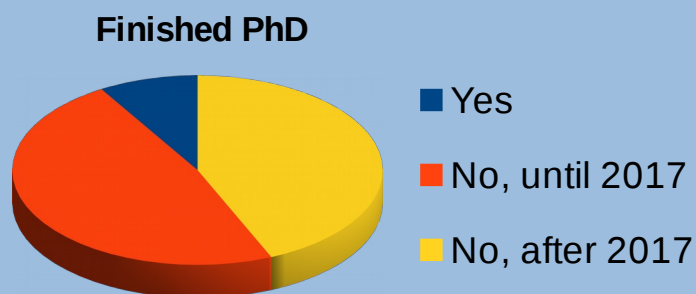
PhD students (exact sciences)

Source: <http://www.bfs.admin.ch>

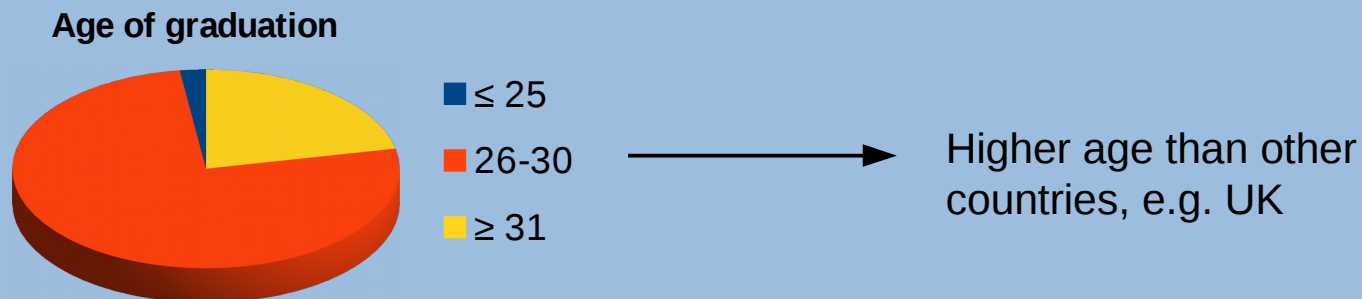


# Graduation time / age

> Have you finished your PhD? When will you finish?



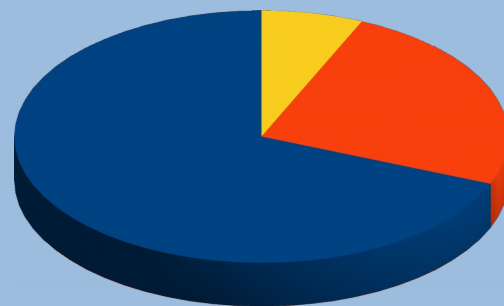
> How old will you be (were you) when you graduate?



# Main motivation

> What was the main reason for applying for your PhD position?

Reason for doing PhD



■ Determination



■ Interest in project

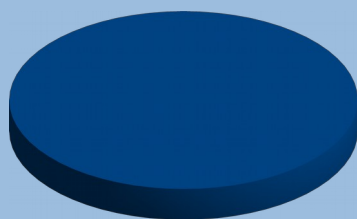
■ Nothing better to do



# Work sector

- > What sector are you doing / did you do your PhD in?

Work sector (during PhD)



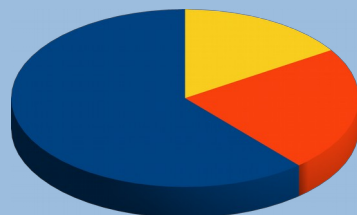
- Academic research
- Private-sector research
- Industry / not research



Particle physics mostly supported by common research funds (e.g. SNF), not private companies

- > What sector would you like to work in after / have been working since your PhD?

Work sector (after PhD)



- Academic research
- Private-sector research
- Industry / not research

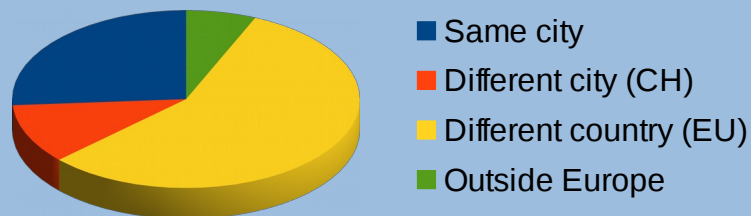


61% happy to stay in academia!

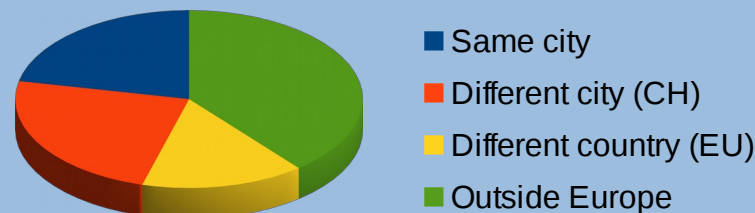
# Job relocation

- > Did you have to relocate for your current position?
- > Are you willing to relocate for a future position?

Relocation (for PhD)

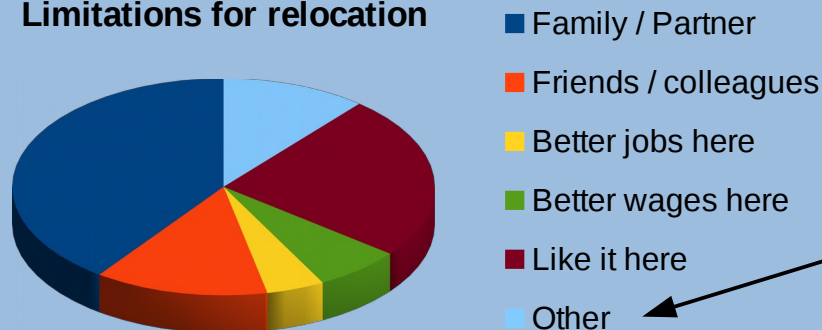


Willingness to relocate (after PhD)



- > Which factors limit your ability or desire to relocate?

Limitations for relocation



“No limitations.”

“Social compatibility”

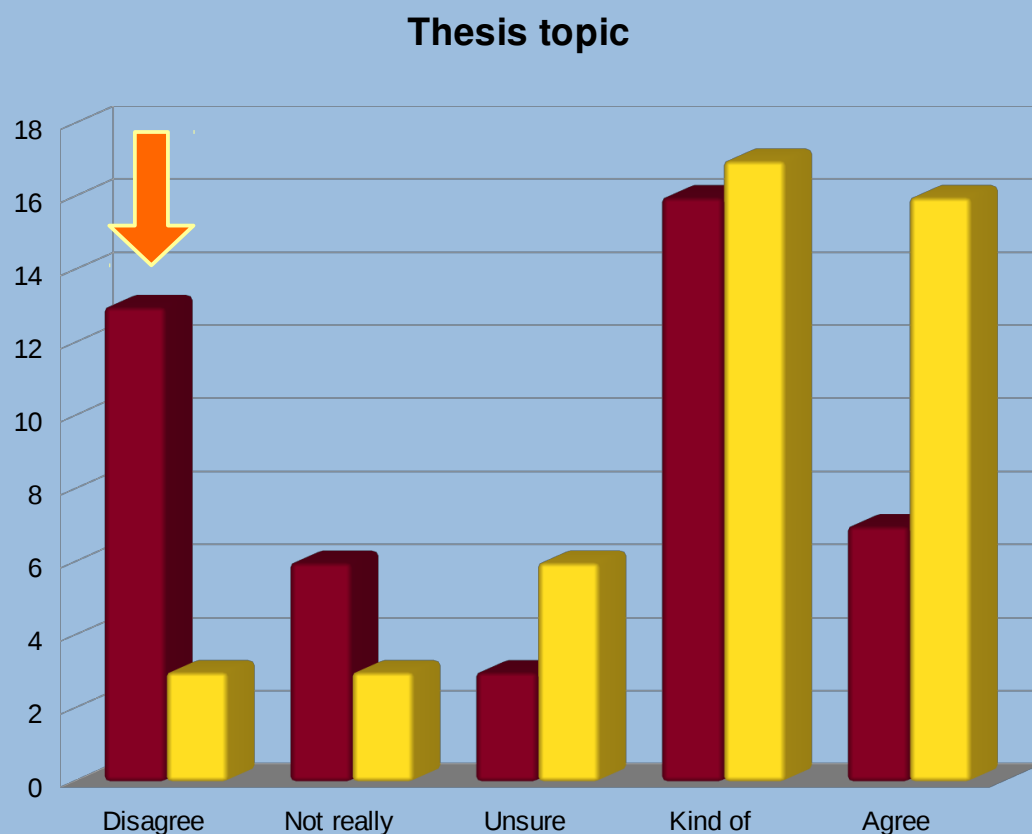
“Piano teacher lives here”

“All of the above.”



# Thesis topic

> Please rate the following statements.



■ My thesis topic was well-defined, I stuck with it from the beginning

**51%**

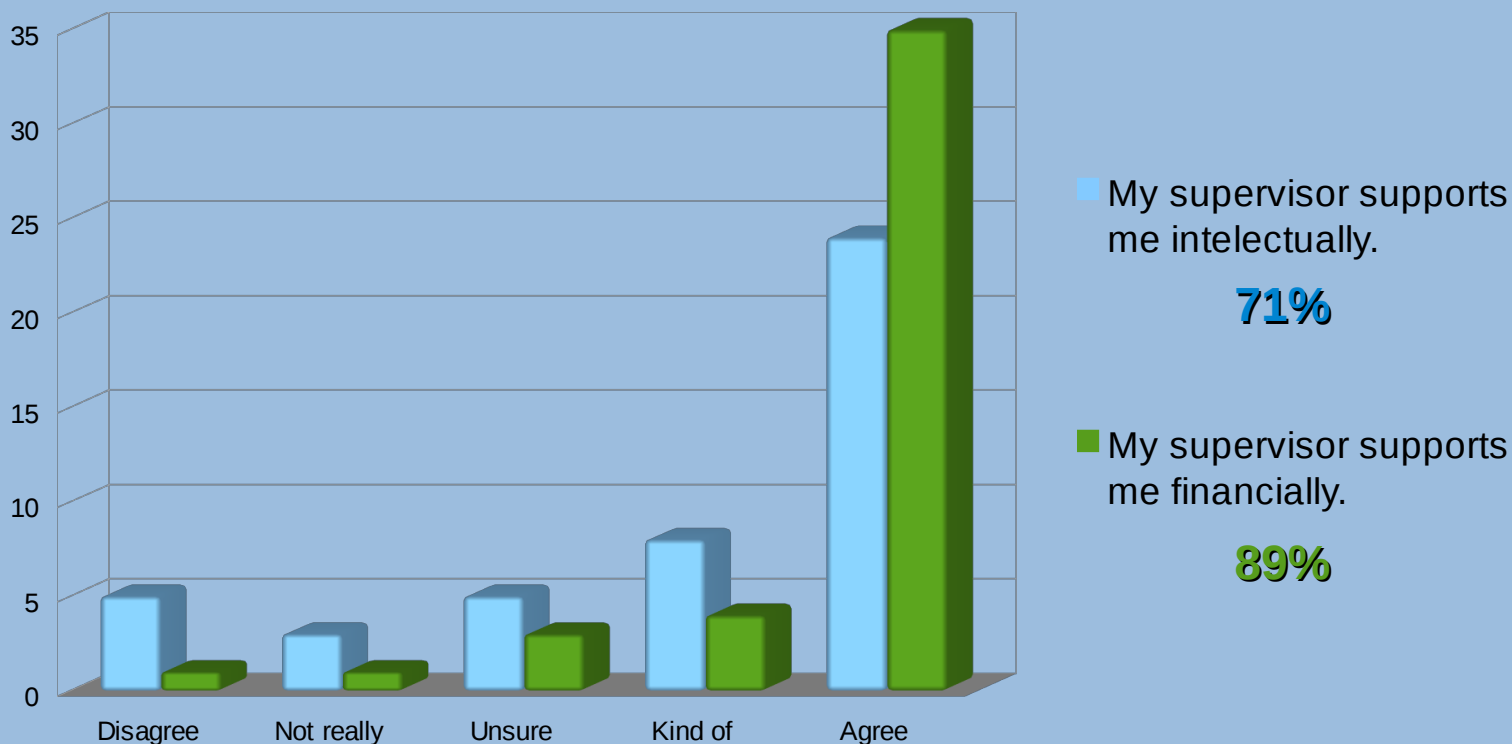
■ I am content with my thesis topic, and want to see it through

**73%**

# Supervisor (1 / 3)

> Please rate the following statements.

## Support from supervisor(s)



My supervisor supports me intellectually.

71%

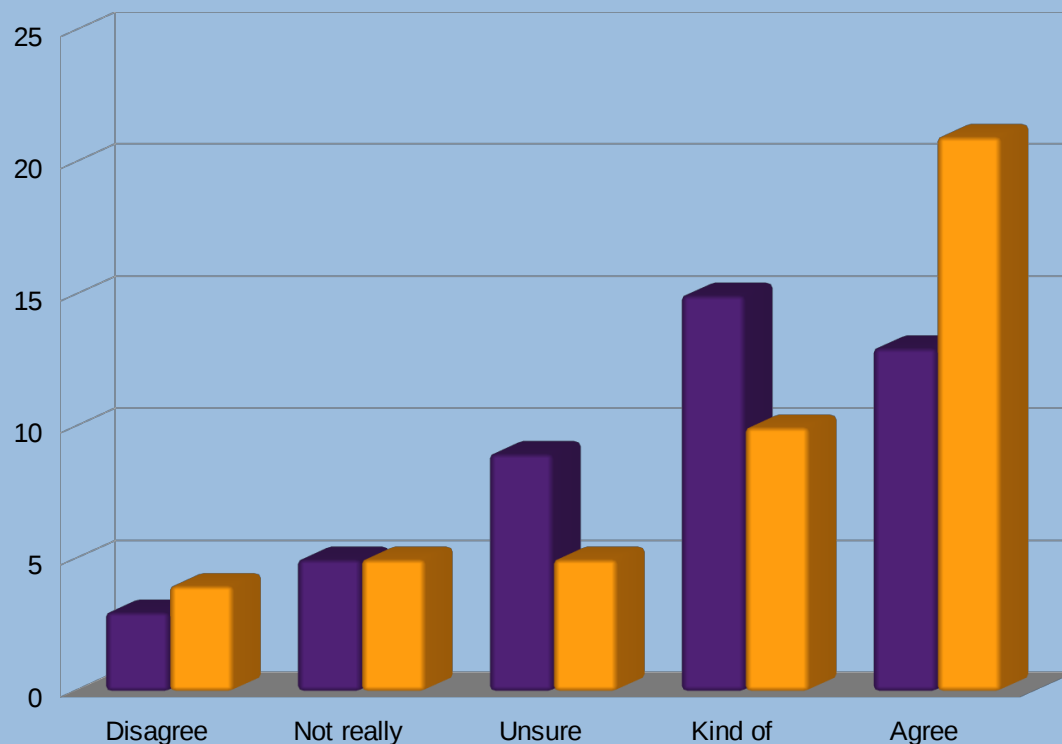
My supervisor supports me financially.

89%

## Supervisor (2 / 3)

> Please rate the following statements.

### Advice from supervisor(s)



■ I often discuss my work with my supervisor.

**62%**

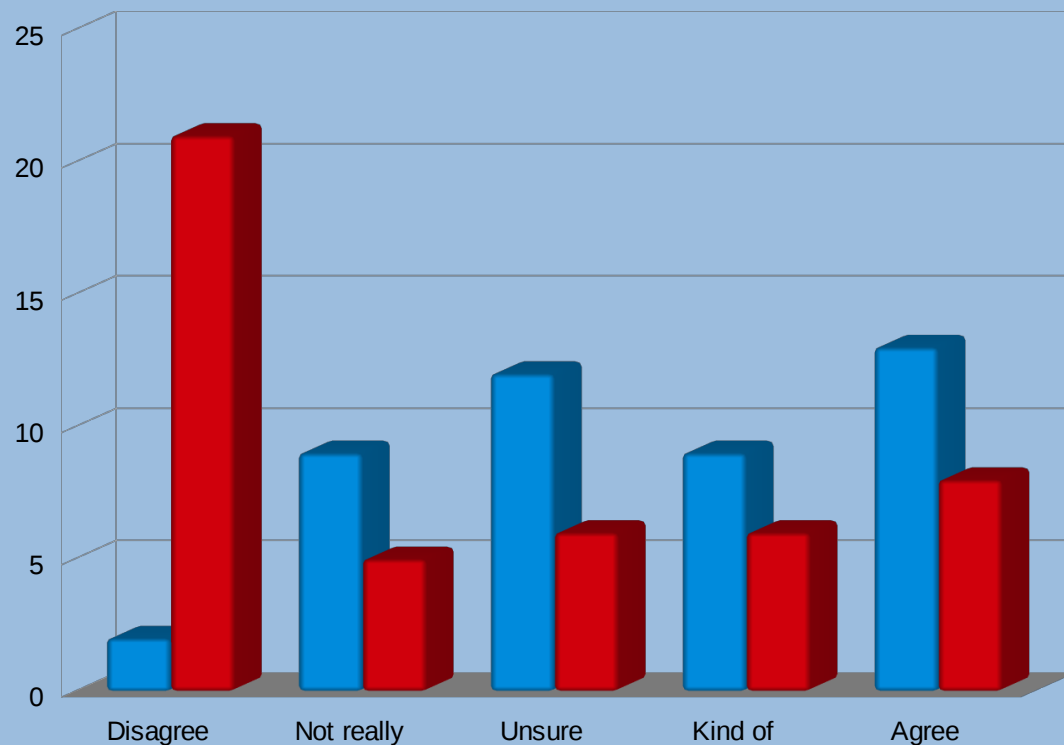
■ My supervisor provides valuable inputs for my research.

**69%**

# Supervisor (3 / 3)

> Please rate the following statements.

## Satisfaction with supervisor(s)



- The input from other co-workers is more important than that of my supervisor.

49%

- I sometimes wish I had a more competent / dedicated supervisor.

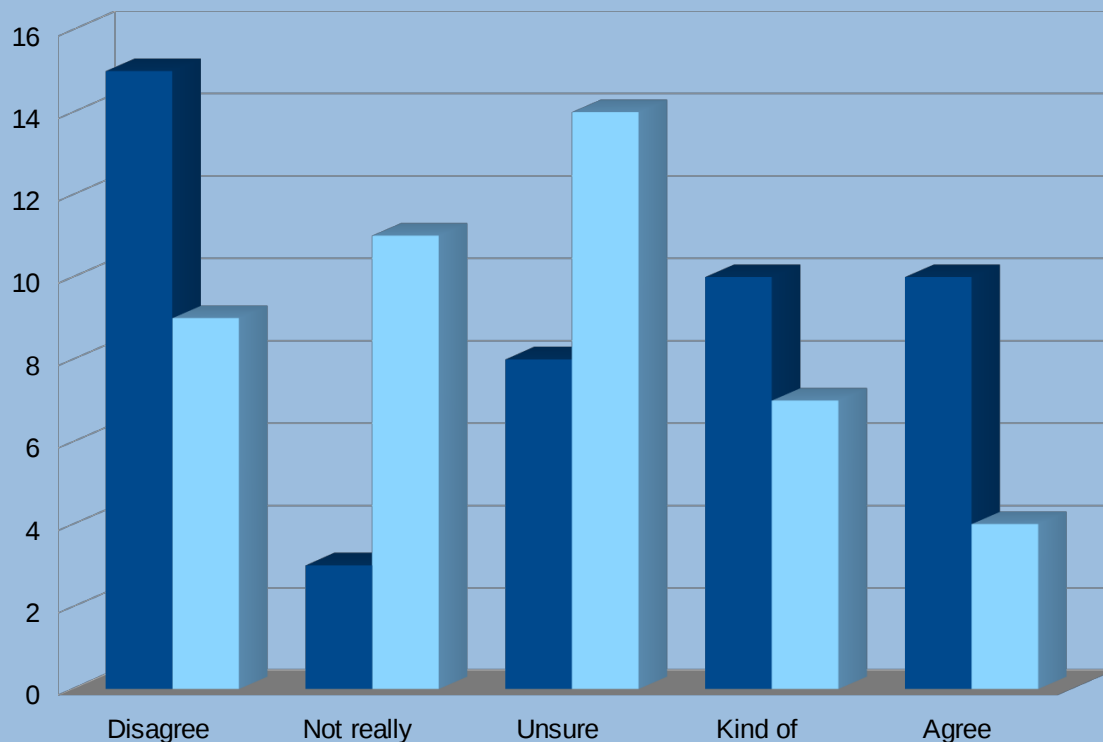
30%



# Collaboration

> Please rate the following statements.

## Size of group / collaboration



■ I work in a rather large collaboration.

**43%**

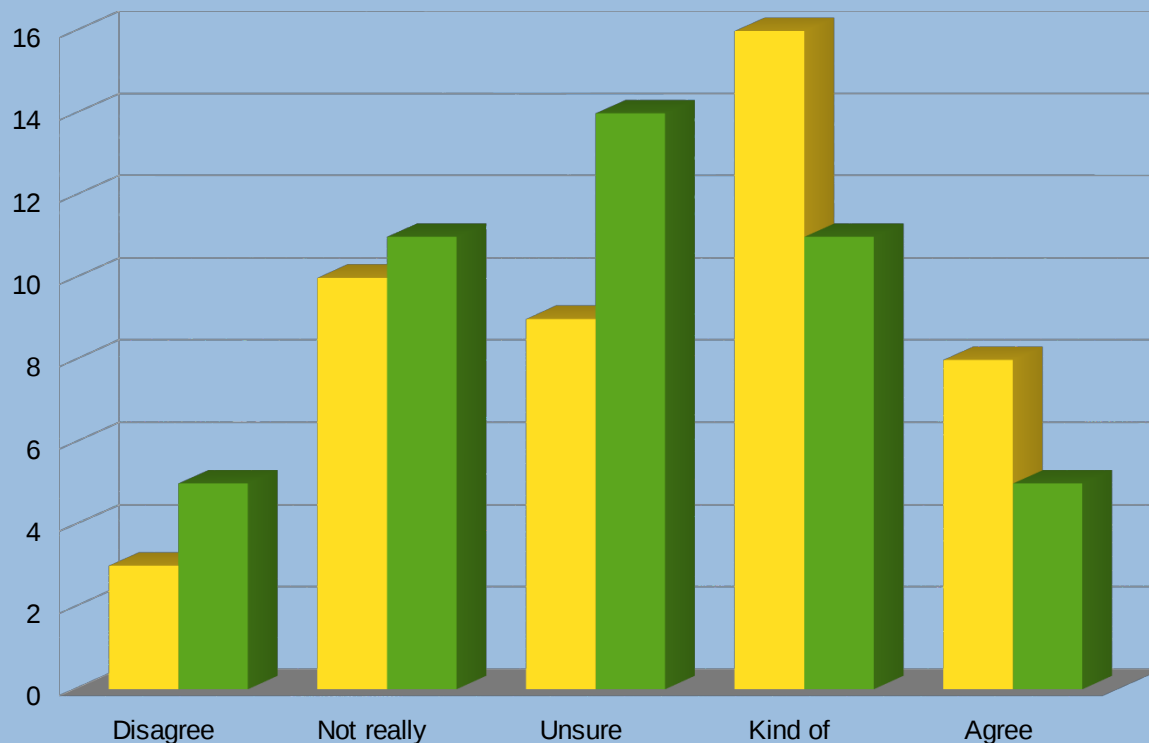
■ I prefer discussing work with a wider community.

**24%**

# Project visibility

> Please rate the following statements.

## Visibility of PhD project



I often present my work in group meetings / informal events.

52%

I often present my work at international meetings / conferences.

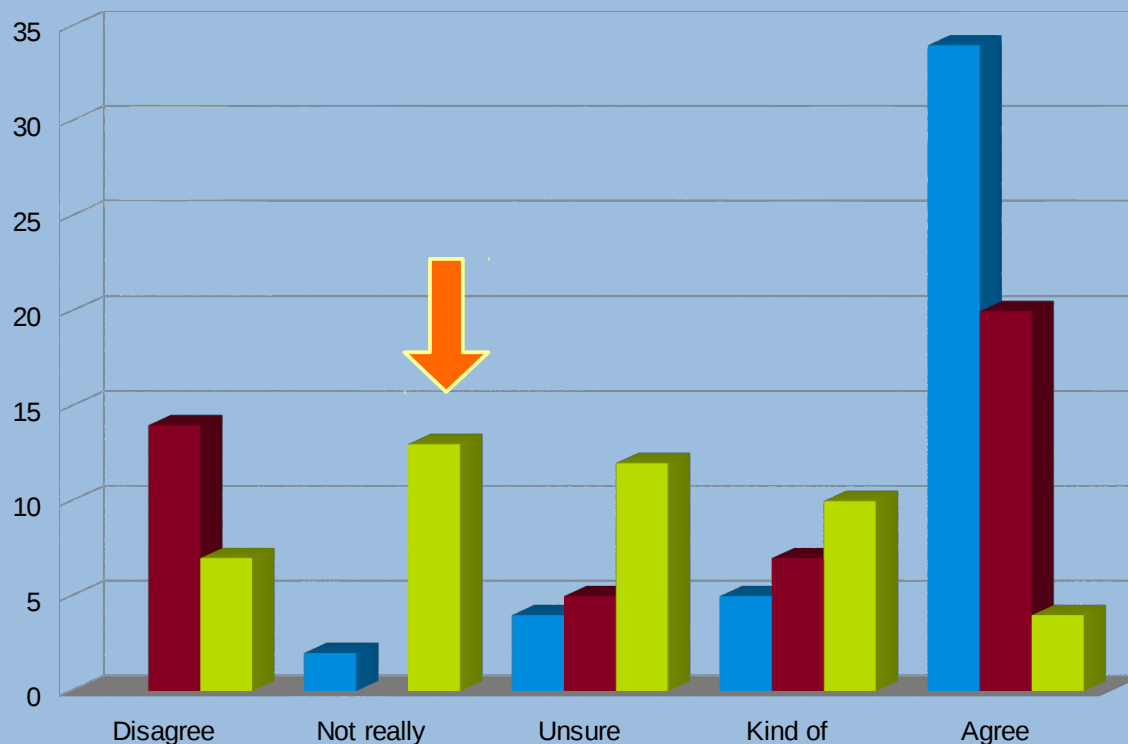
35%



# Additional work

> Please rate the following statements.

## Required duty work / service tasks

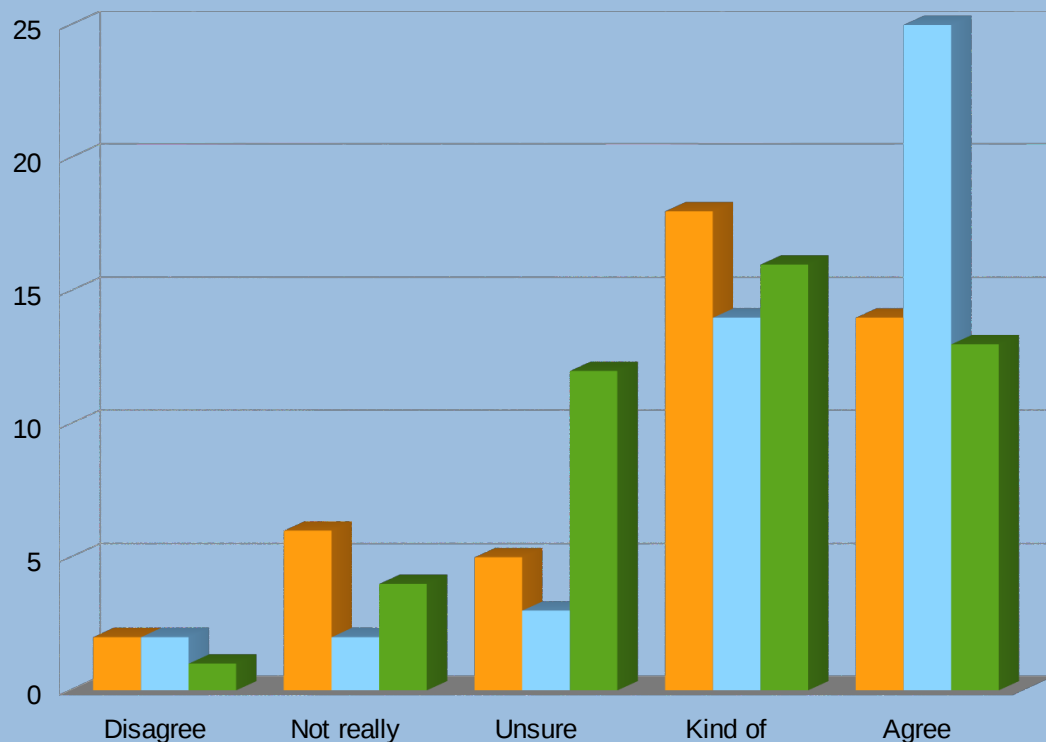


- I have to do duty work for my university (e.g. teaching, correcting exams).
- I have to do duty work for my collaboration (e.g. detector shifts, hardware calibration, software validation).
- The workload of my duty work is acceptably low.

# General satisfaction

> Please rate the following statements.

General satisfaction






■ The formal part of the PhD program is clear to me (lectures, requirements, deadlines).

■ I am satisfied with the physics part of my PhD program (quality of research/group/institute).

■ I am satisfied with the social part of my PhD program (co-workers / atmosphere at work / social events).

**On average: 73%**

## Additional comments

- > “After working in EU and paying taxes, I am **not eligible to apply** to such places as CERN. In my opinion it's not right.” 
- > “The **career path was completely unclear**, e.g. people in academia care about 'mobility' and not expertise in physics.” 
- > “**Academia seems not to care about keeping good researchers**, the flow of people is too high, and the knowledge does not stay in a research group.”
- > “The **amount of responsibilities** in academic research is **much higher** than the freedom to work on research projects of one's choice.”
- > “There is very **little protection from PI's** influence. Presence of a second, independent supervisor could help in some situations.” 
- > “People [here] are [uninteresting] and have no social competences. PhD students are left on their own without a social net.”

# Summary

- > Being a PhD student in Switzerland is not too bad
- > High living costs compensated by high wages
  
- > Good visibility in international community
  
- > Some room for improvement:
  - **Structure courses**, regularly review & update thesis topic
  - **Improve student-supervisor relationships**
    - attend regular meetings, possibly second supervisor
  - Reduce responsibilities, **distribute service work fairly**
    - if teaching is part of PhD, everyone should do it
  - Offer **combined 5-year Master+PhD** program?

# Thanks!



# References

- > [https://indico.cern.ch/event/449732/contribution/14/attachments/1164290/1677733/rECFA\\_maeland.pdf](https://indico.cern.ch/event/449732/contribution/14/attachments/1164290/1677733/rECFA_maeland.pdf)
- > <https://www.ethz.ch/en/the-eth-zurich/welcome-center/services-and-downloads/cost-of-living.html>
- > [http://www.myscience.ch/en/jobs/phd\\_in\\_switzerland](http://www.myscience.ch/en/jobs/phd_in_switzerland)
- > [http://www.snf.ch/SiteCollectionDocuments/allg\\_doktorierende\\_d.pdf](http://www.snf.ch/SiteCollectionDocuments/allg_doktorierende_d.pdf)
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- > <http://www.quantumdiaries.org/2012/10/31/women-in-physics-are-we-there-yet/>
- > <https://www.surveymonkey.com/>