

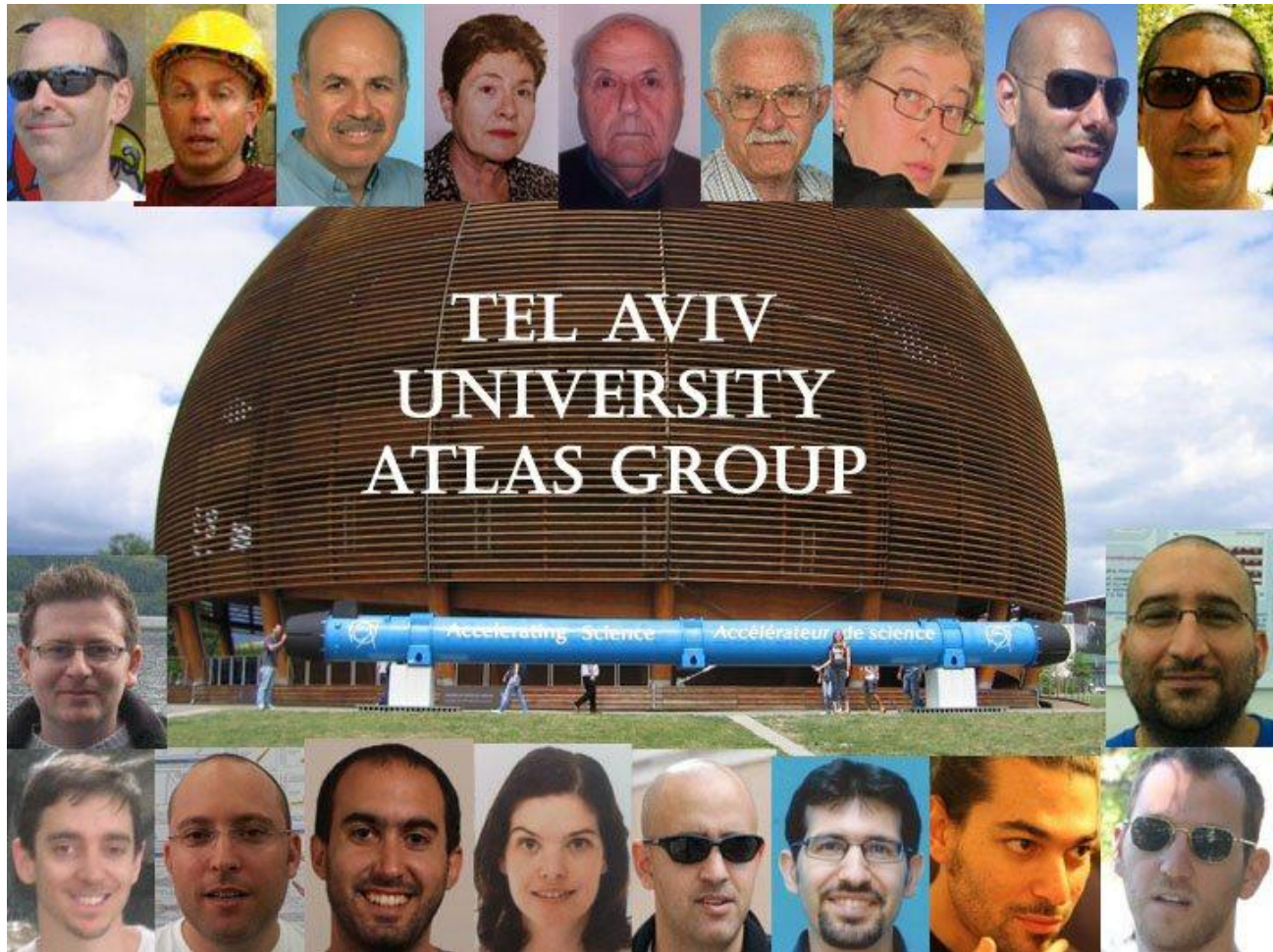
RECFA visit to ISRAEL

Student's presentation



Adi Ashkenazi

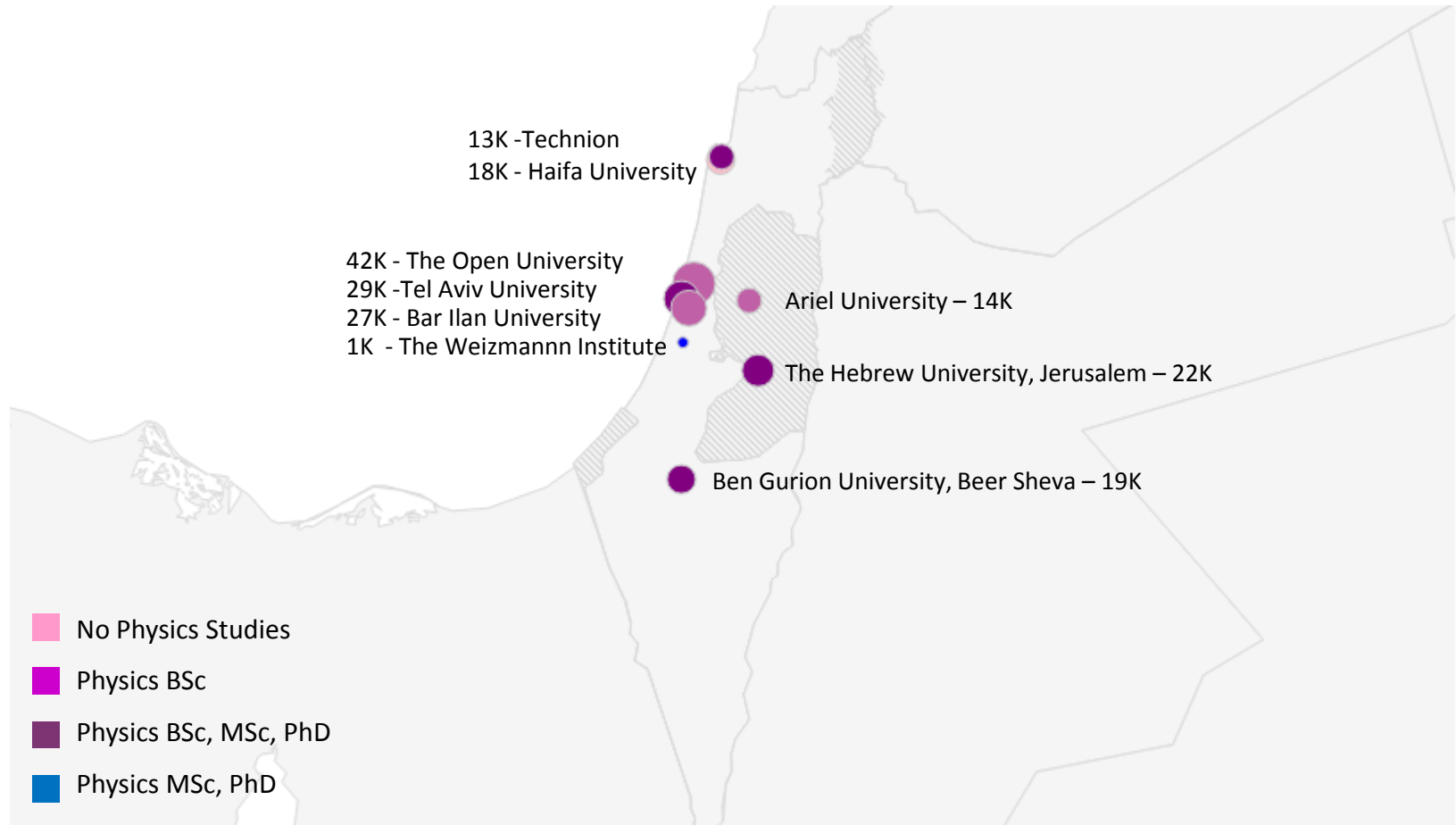
10/04/2014



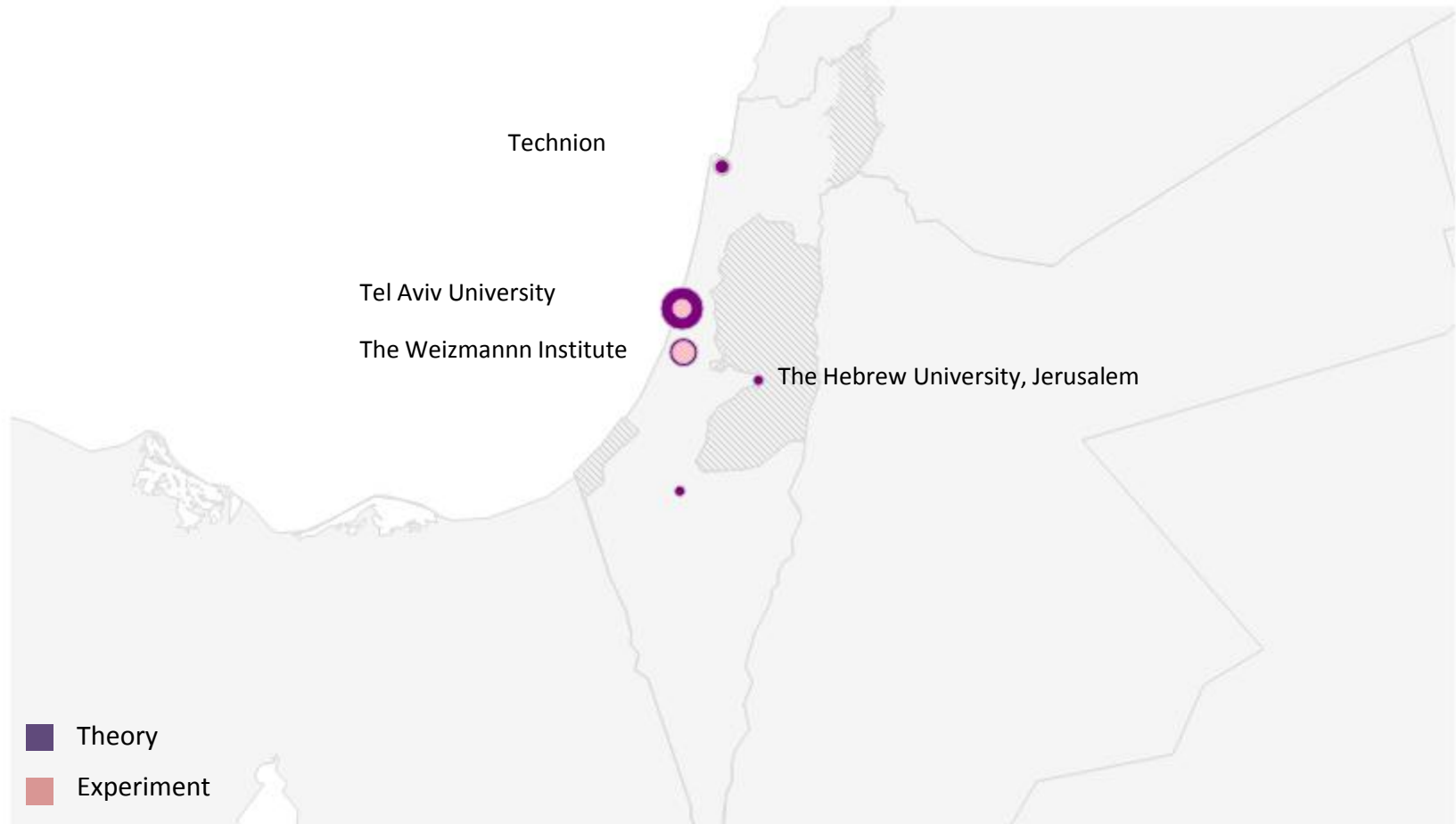
Outline

- Physics studies in Israel:
 - Israel's Universities
 - HEP research groups in Israel
- PhD in HEP – facts and figures
- The average PhD HEP student
 - Me as an example for a PhD HEP student
 - Research
 - Schedule

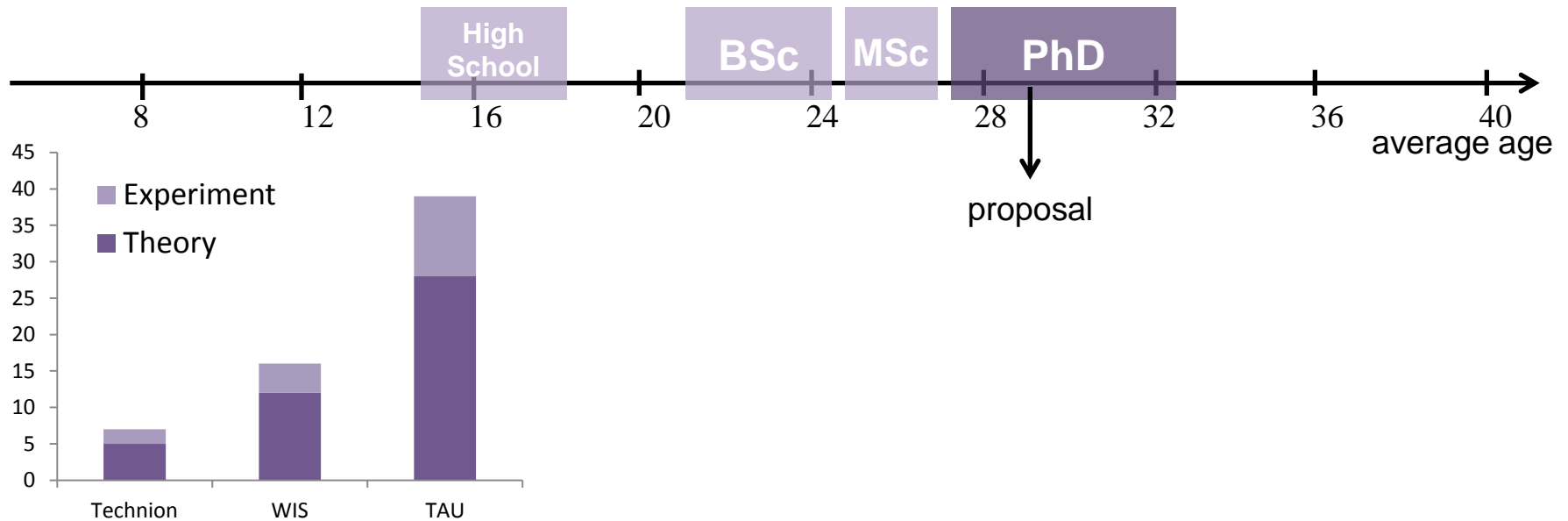
Map of Universities in Israel



Map of HEP PhD Students

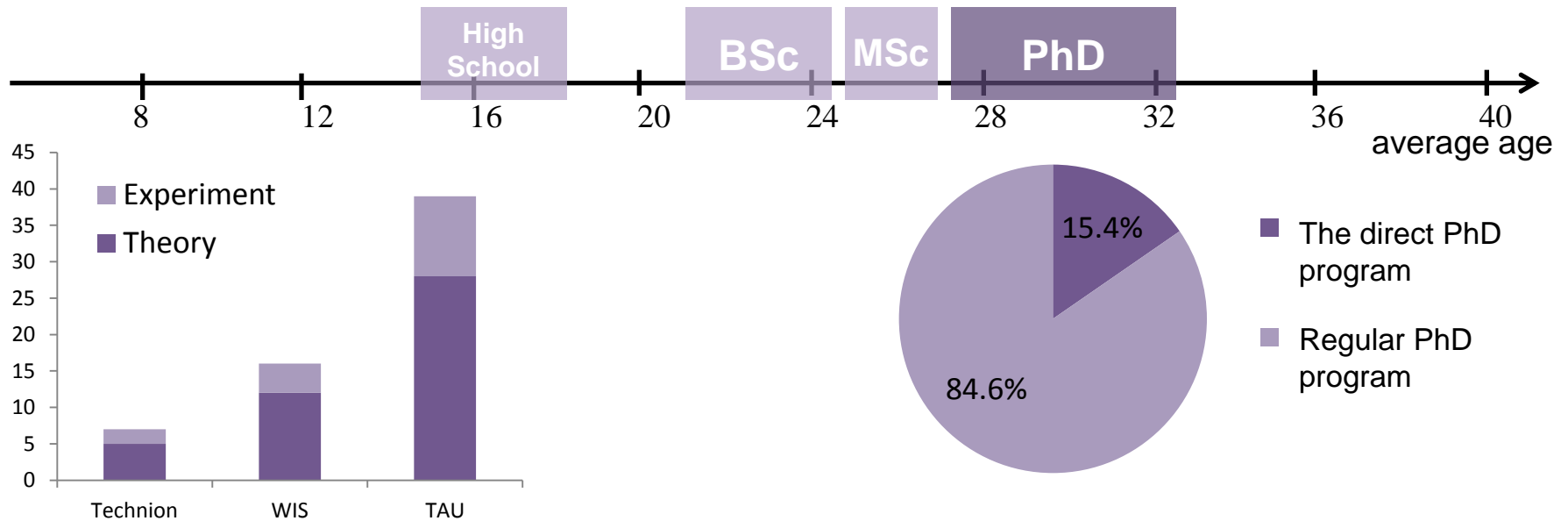


PhD in HEP – facts and figures



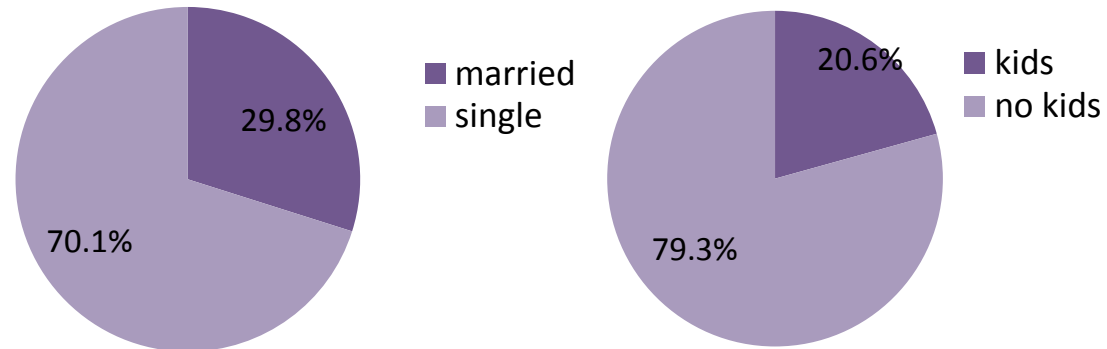
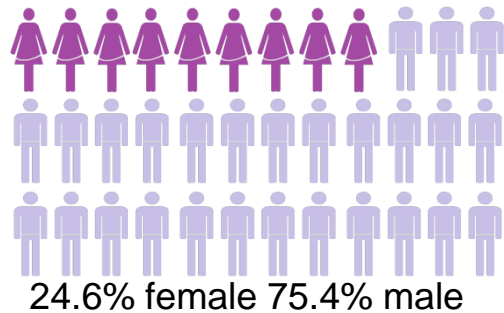
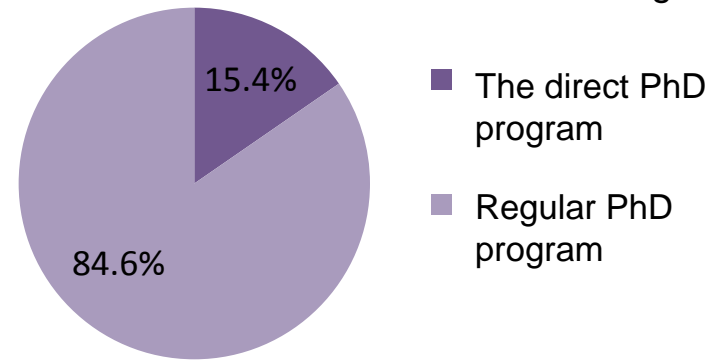
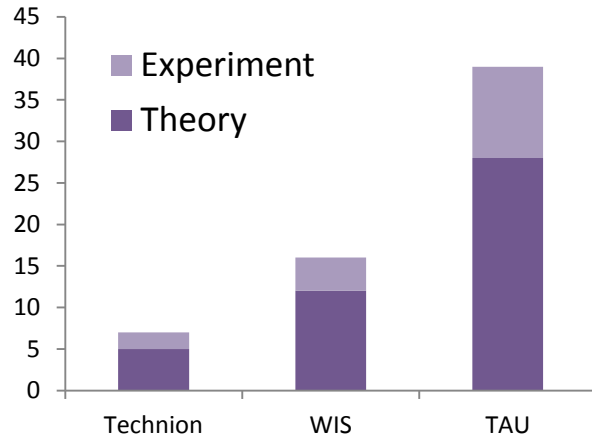
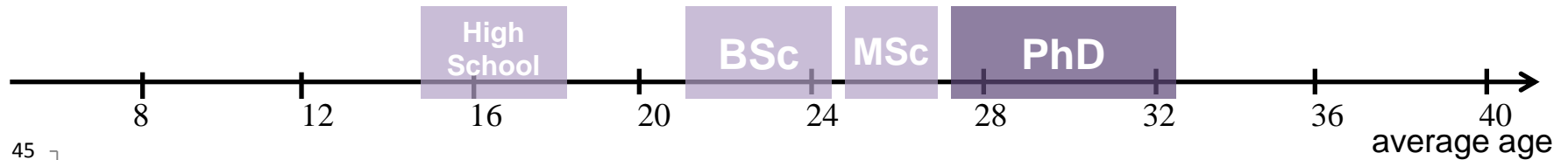
Not based on official data

PhD in HEP – facts and figures



Not based on official data

PhD in HEP – facts and figures



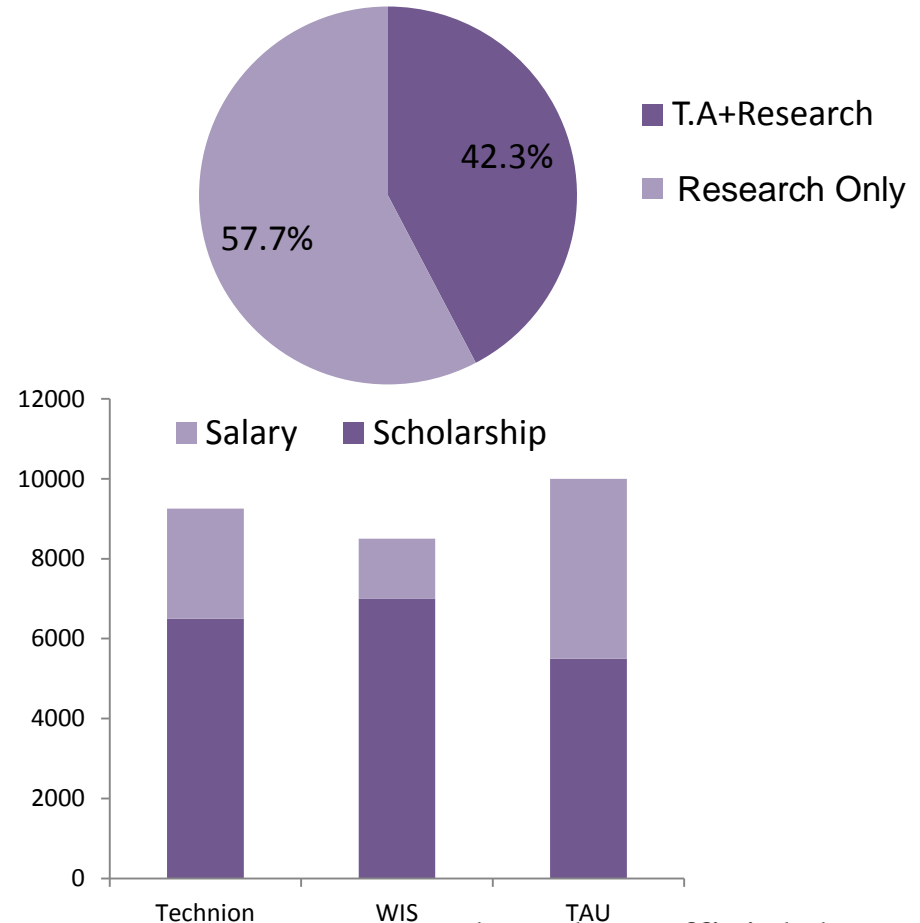
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PhD in HEP – facts and figures



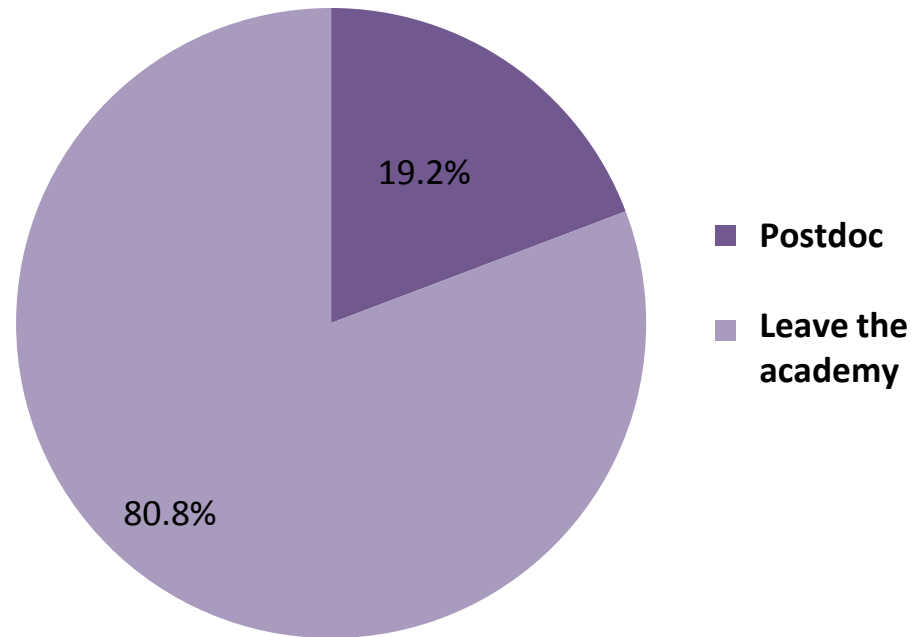
A PhD student spends 17 days on average abroad, per year.

More than 12% spent one or more semesters abroad.



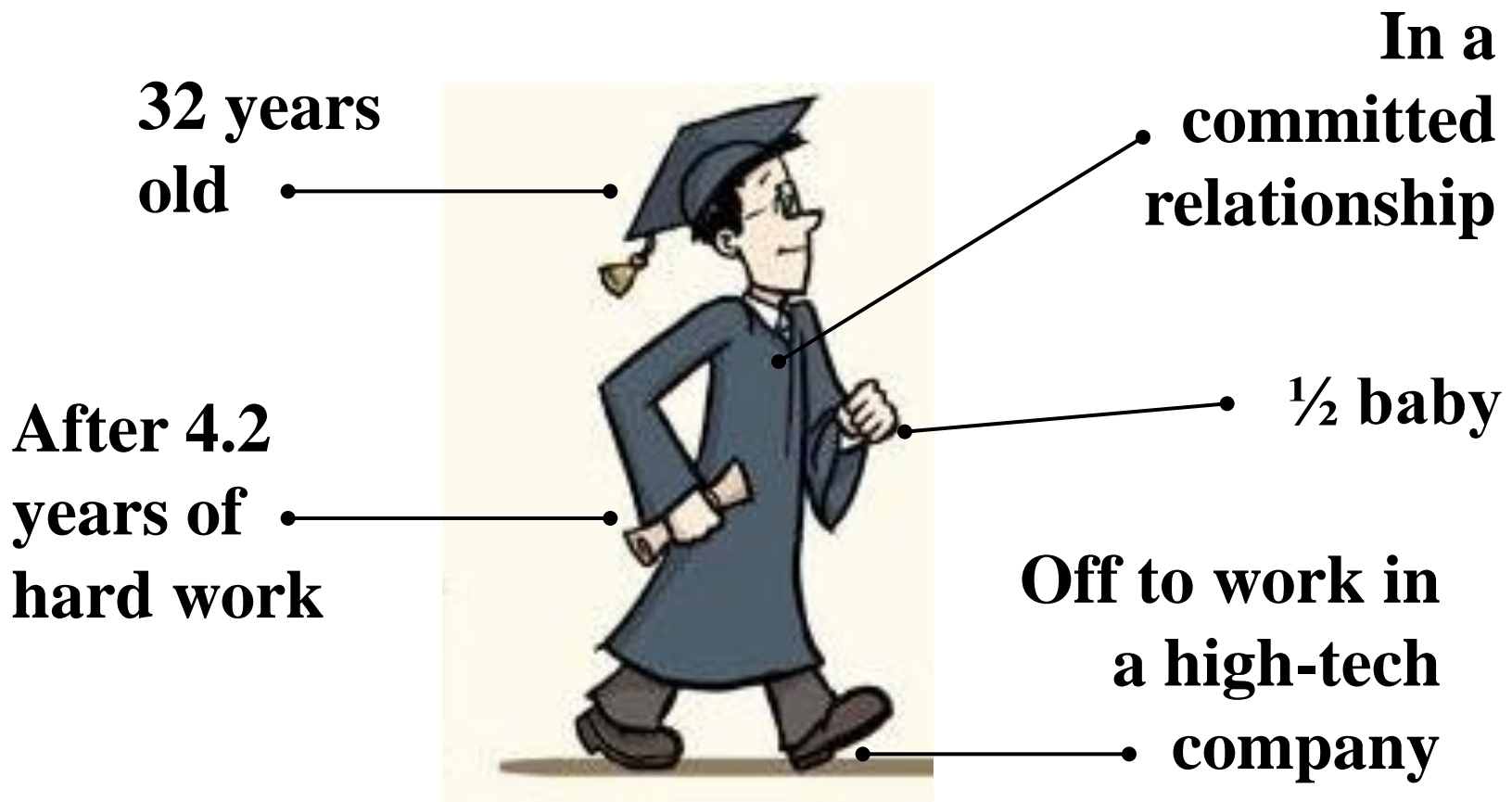
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PhD in HEP – facts and figures



Not based on official data

The Average PhD graduate

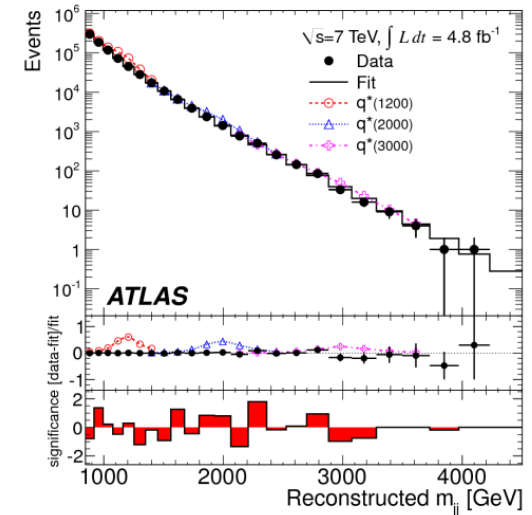


The Average PhD student

Myself as an example

Research activities:

- Search for new physics beyond the Standard Model in dijet events at the LHC:
 - Mass resonance search.
 - Including Trigger Level Analysis
 - Dijet angular analysis.



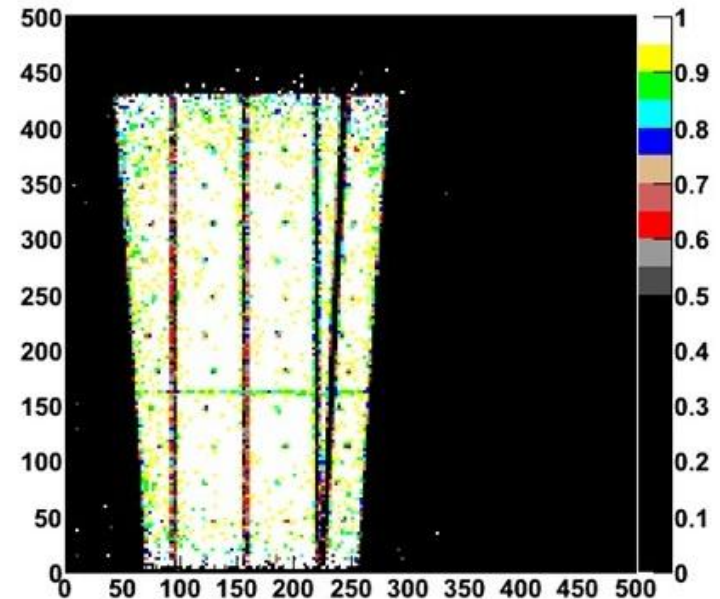
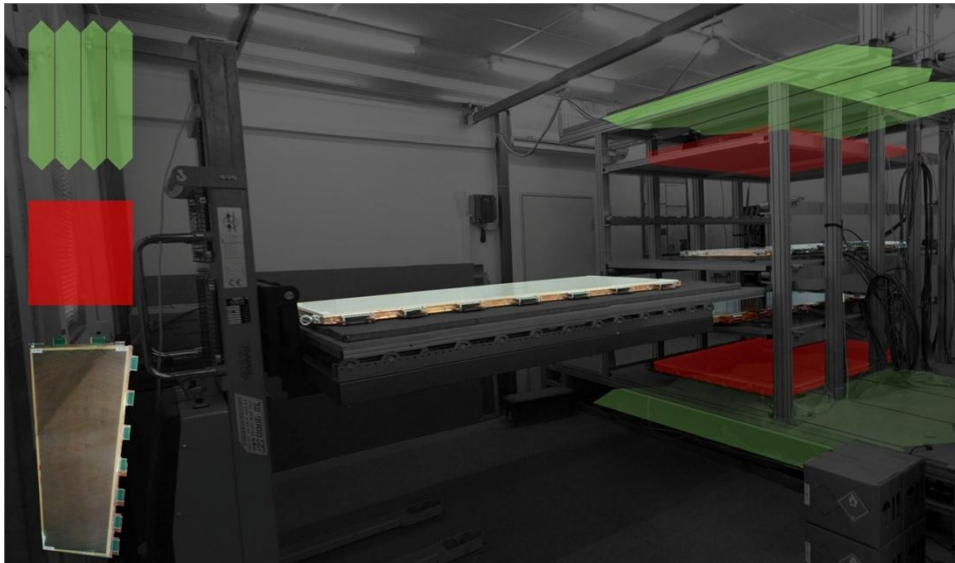
Supervisors:
Dr. Gideon Bella, Prof. Erez Etzion

The Average PhD student

Myself as an example

Research activities:

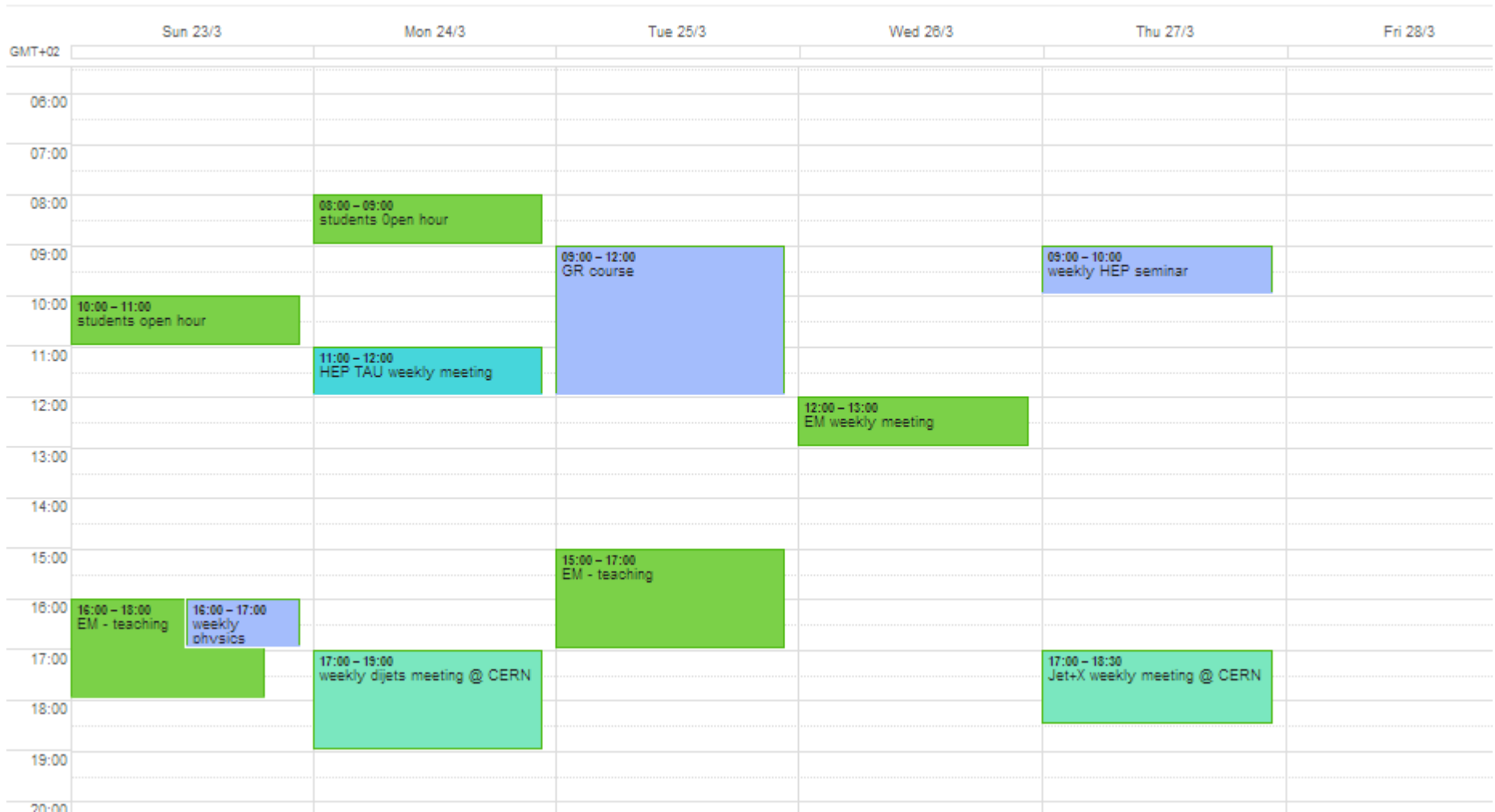
- Construction and operation of the offline analysis environment for the TGC (muon detector) quality test.



Working with: Meny Ben Moshe, Dr. Yan Benhammou

The Average PhD student

Myself as an example



Thank you for your attention



Backup Slides

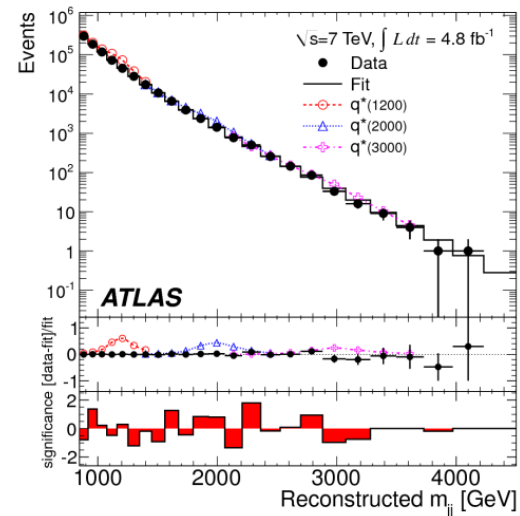
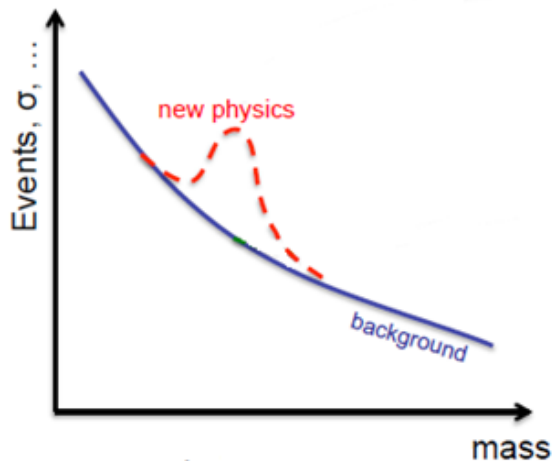
Trigger Level Analysis

QCD m_{jj} distribution is expected to be smooth.

Several NP models could lead to a localized excess.

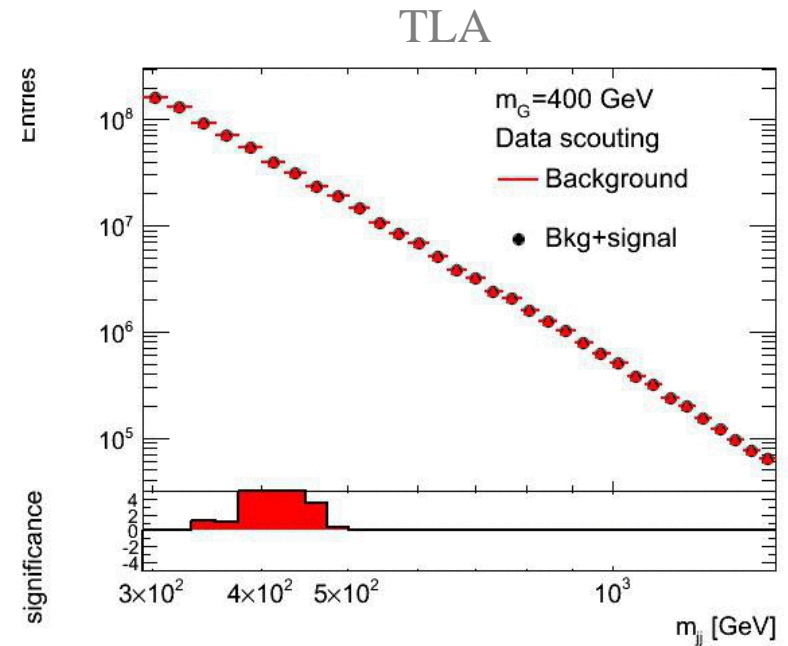
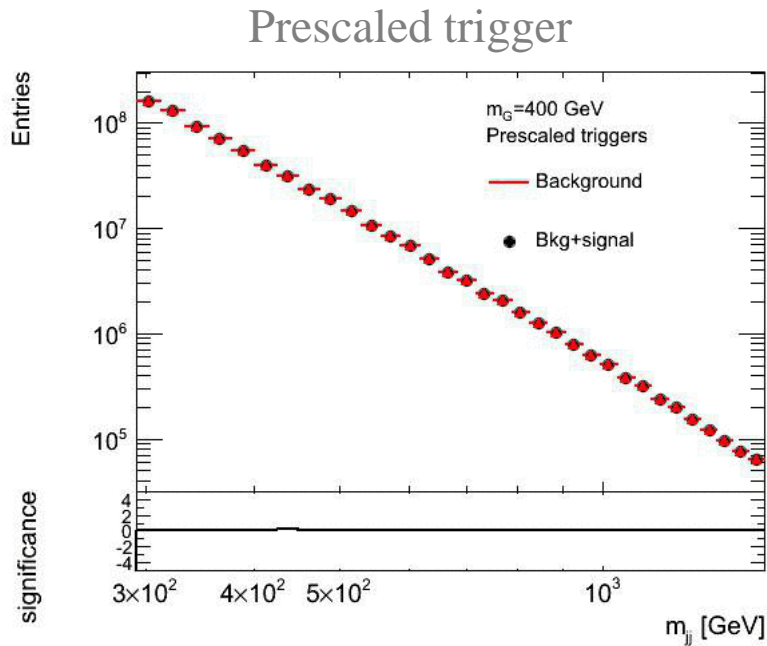
-The high dijets mass resonance search is well covered.

- The low dijets mass resonance search is limited due to finite trigger bandwidth, which imposes high prescales for high rate processes.



Trigger Level Analysis

Dijets Mass resonance search Significance Calculation

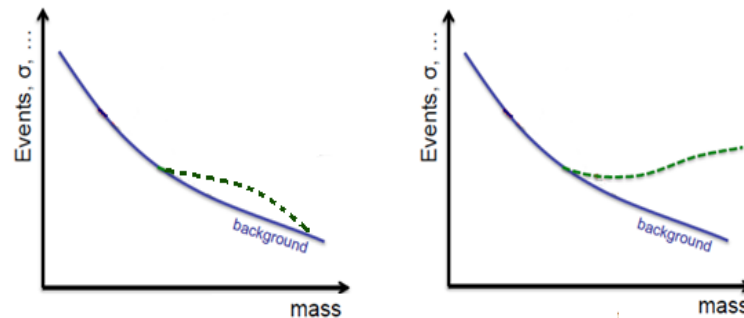


Dijet Angular Analysis

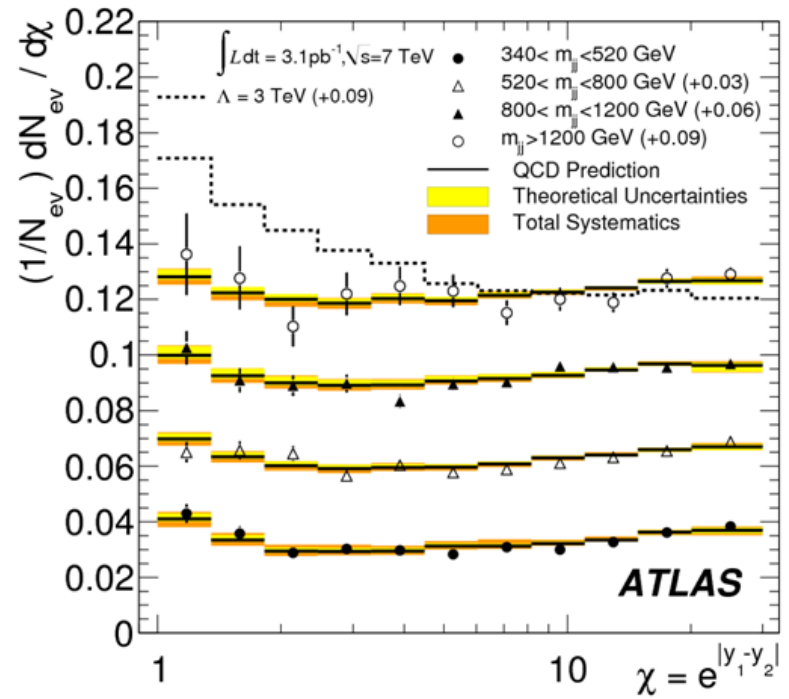
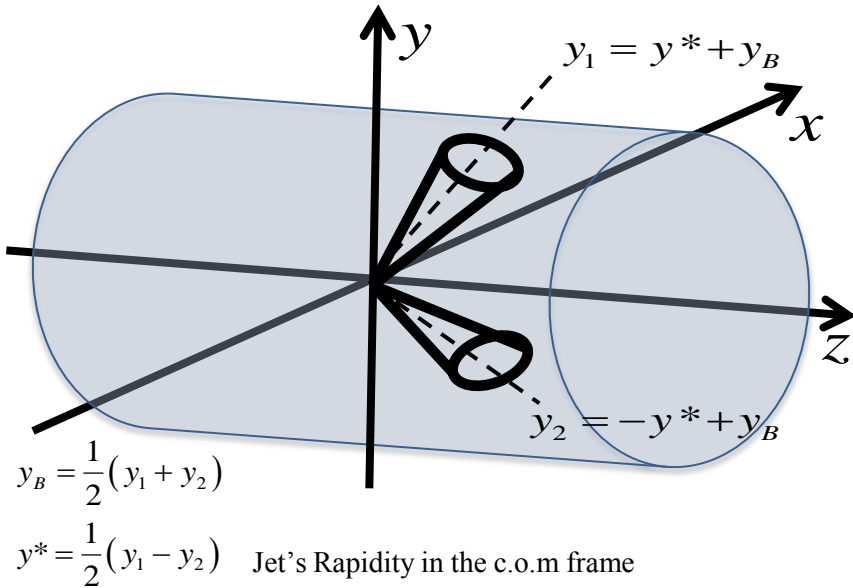
Complementary for to mass resonance search, to account for wide resonances or high tail,

Gain higher sensitivity from the angular data.

Opportunity to distinguish between different models.



Dijet Angular Analysis



Compare angular variables to MC predictions:

$$\chi = e^{2|y^*|}$$

$$F_\chi(m_{jj}) = \frac{N_{events}(|y^*| < 0.6)}{N_{events}(|y^*| < 1.7)}$$