

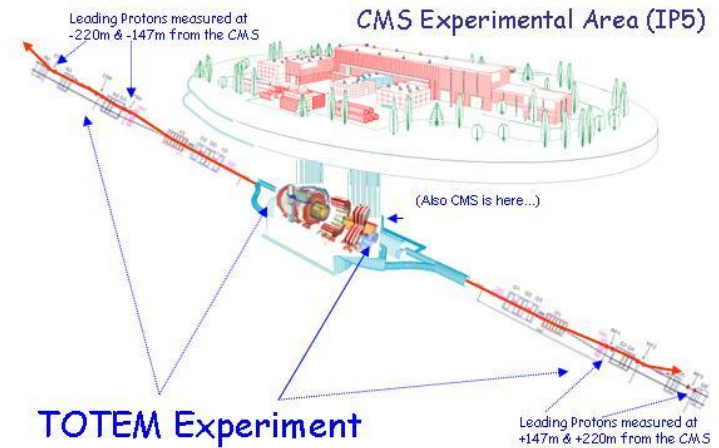
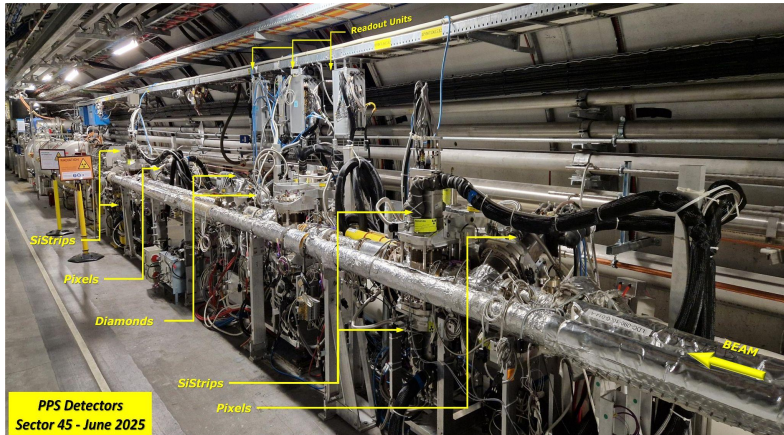
## I am *Annalisa Feliziani*:

- University of Bologna, bachelor's degree
  - *Thesis*: Modeling of lava tubes
- University of Pisa, master's degree
  - *Thesis*: BSM searches with escaping invisible particles associated to a Higgs boson and protons tagged with the PPS.
- University of Siena, PhD
  - *Project*: search for BSM physics with PPS (CMS) spectrometer.

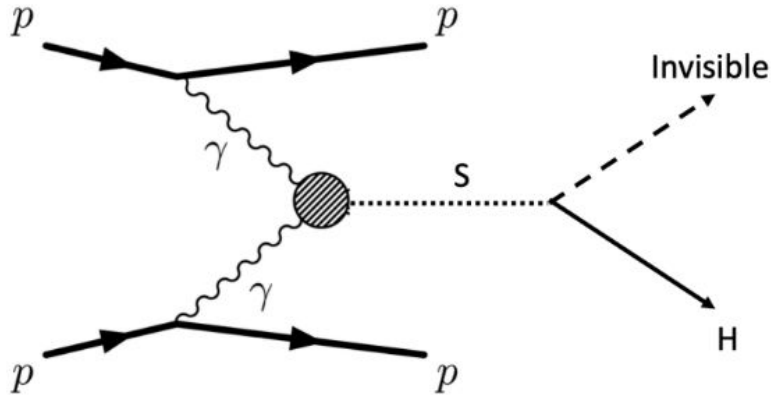


# Precision Proton Spectrometer

- Large Hadron Collider (LHC), Compact Muon Solenoid (CMS)
- PPS started as a joint CMS and TOTEM project, at IP5, started in 2016
- Forward physics
- Tracking and timing detectors



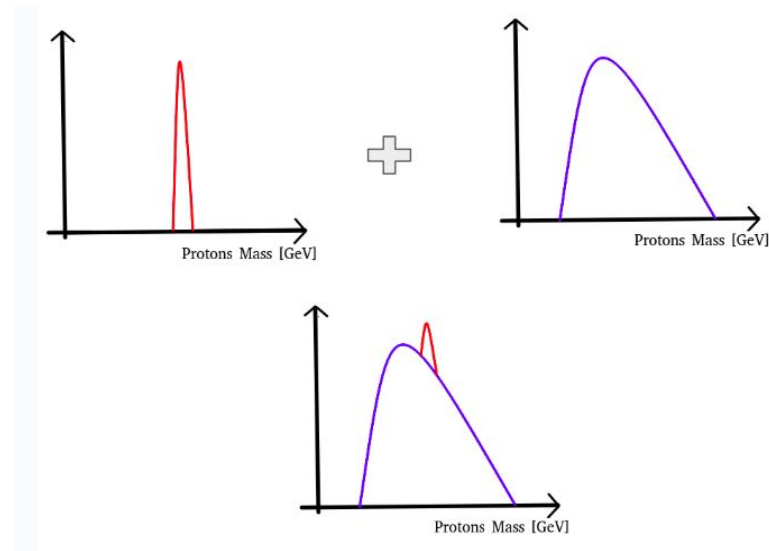
# Ongoing analysis



- Production of a heavy scalar by photon fusion
- With PPS the kinematics in exclusive events is closed
- Higgs + invisible
- The scalar particle is fully reconstructed by the protons kinematics.

# Strategy

- Full blinded analysis
- Match all the kinematics up to some level then proceed with a *bump search* on top of the background



# Conclusions

Next goals of my research project:

- Finish the current analysis and continue with this line of research, using different configurations
- Start contributing to the realisation of the new tracking detectors for the High Lumi phase planned for 2029 at the LHC.

***Thanks for yours attention!***