

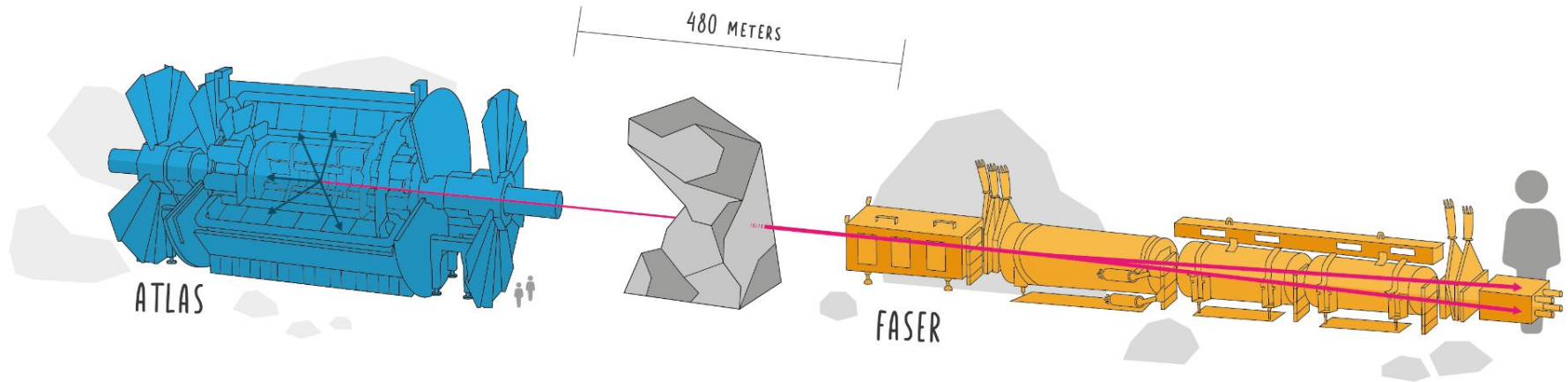
FORWARDS:

The feeblest particles of the Universe under the LHC microscope

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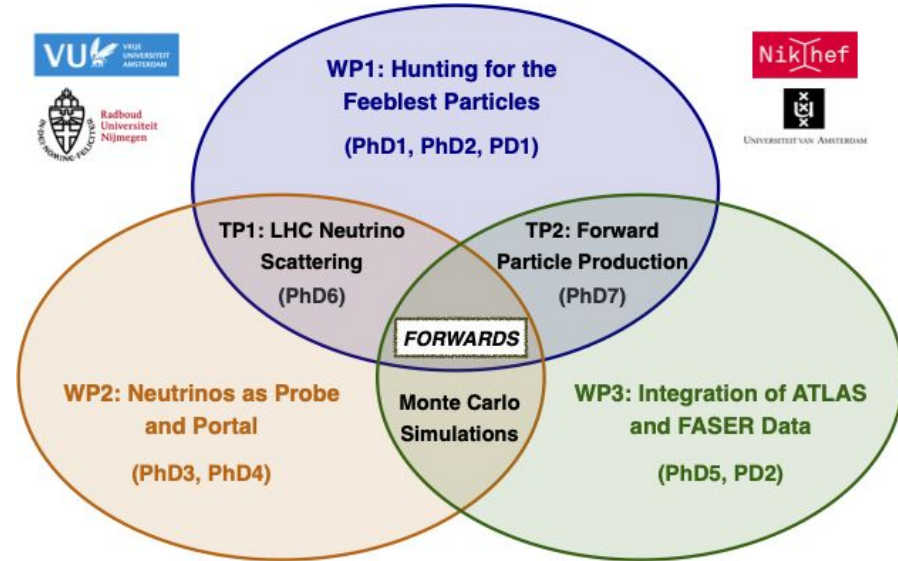
The aim

We propose a comprehensive program aimed to **scrutinise the feeblest particles in the Universe** by exploiting LHC high-energy forward particle production.



Research goals

1. Do **neutrinos** exhibit novel properties when probed at LHC energies?
2. Does **FIP dark matter** interact with standard matter in the FASER far-forward region?
3. Which uncharted phenomena in the **proton substructure** are resolved by the LHC neutrino beam?
4. Are **tensions from astroparticle physics data** falsified in the controlled laboratory environment of FASER?



Innovative nature and Consortium quality

Innovation

By leveraging a hitherto ignored source of energetic light particles produced by the LHC, this project will lead to paradigm shifts in (astro-)particle physics. **No existing or planned experiment achieves a comparable reach in our core targets.**

Consortium

By connecting theory modelling with data analysis and interpretation, it will kick-start a **vibrant world-leading Dutch program in LHC far-forward physics**, combining guaranteed deliverables in neutrino and hadronic science with unprecedented sensitivity to new feebly interacting particles.

FORWARDS!

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