

FPF and FASER

[2503.19010] and [2503.19775]

Felix Kling (DESY)

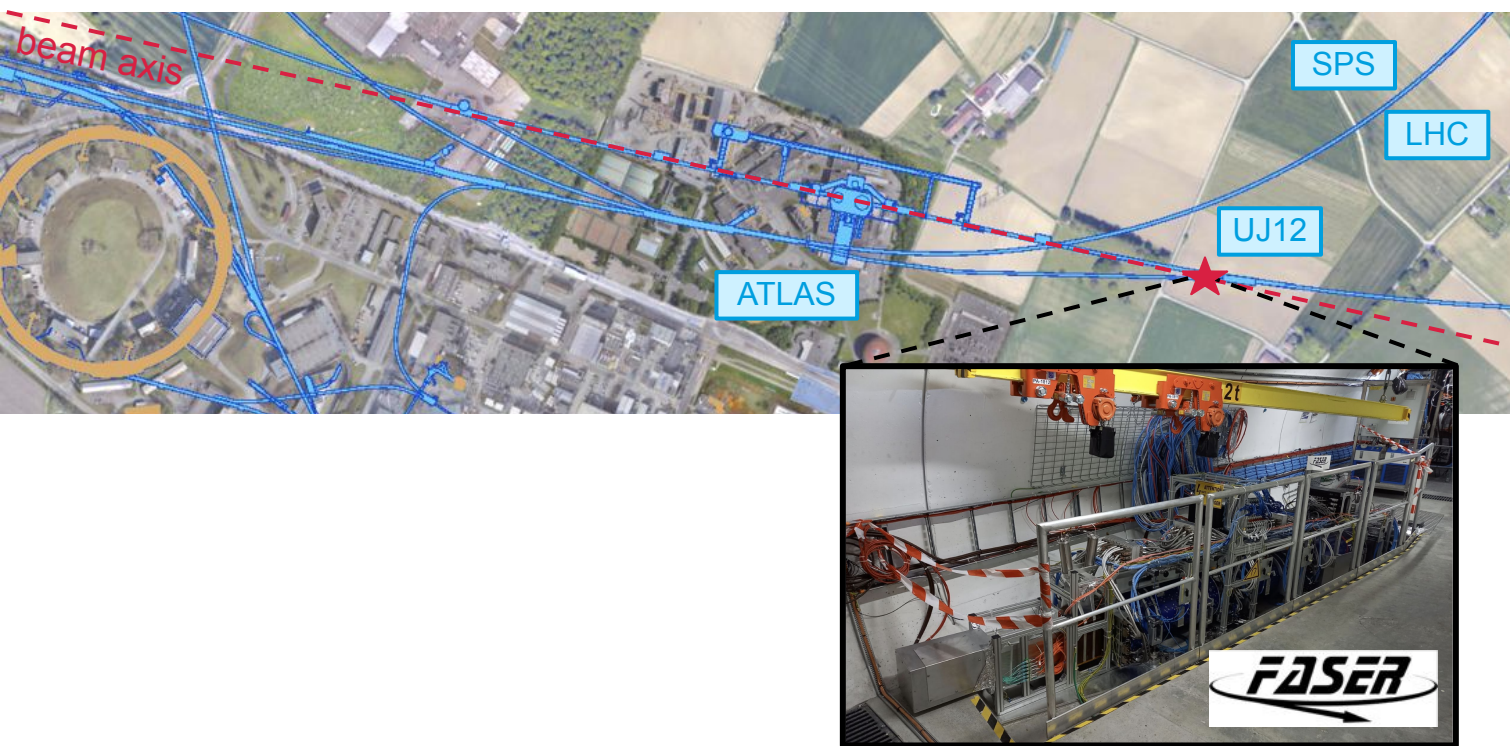
36th Future Colliders @ DESY meeting

04.04.2025



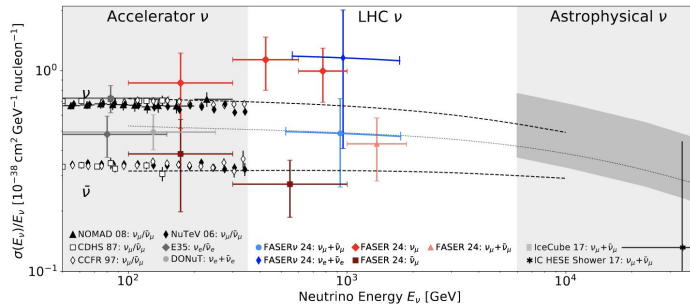
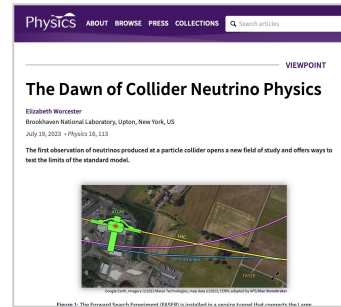
Neutrinos at the LHC.

LHC provides an intense and strongly collimated beam of TeV-energy neutrinos along beam collision axis. FASER started operation in LHC Run3 to exploit this potential.



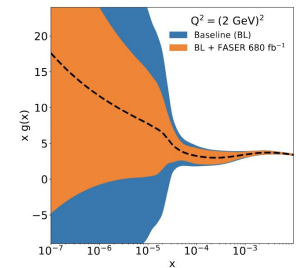
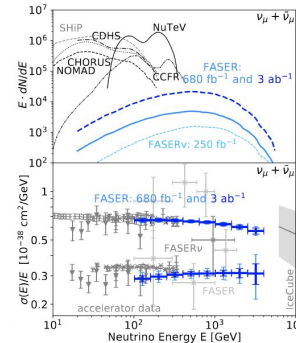
The Dawn of Collider Neutrino Physics.

FASER saw first neutrino interactions!



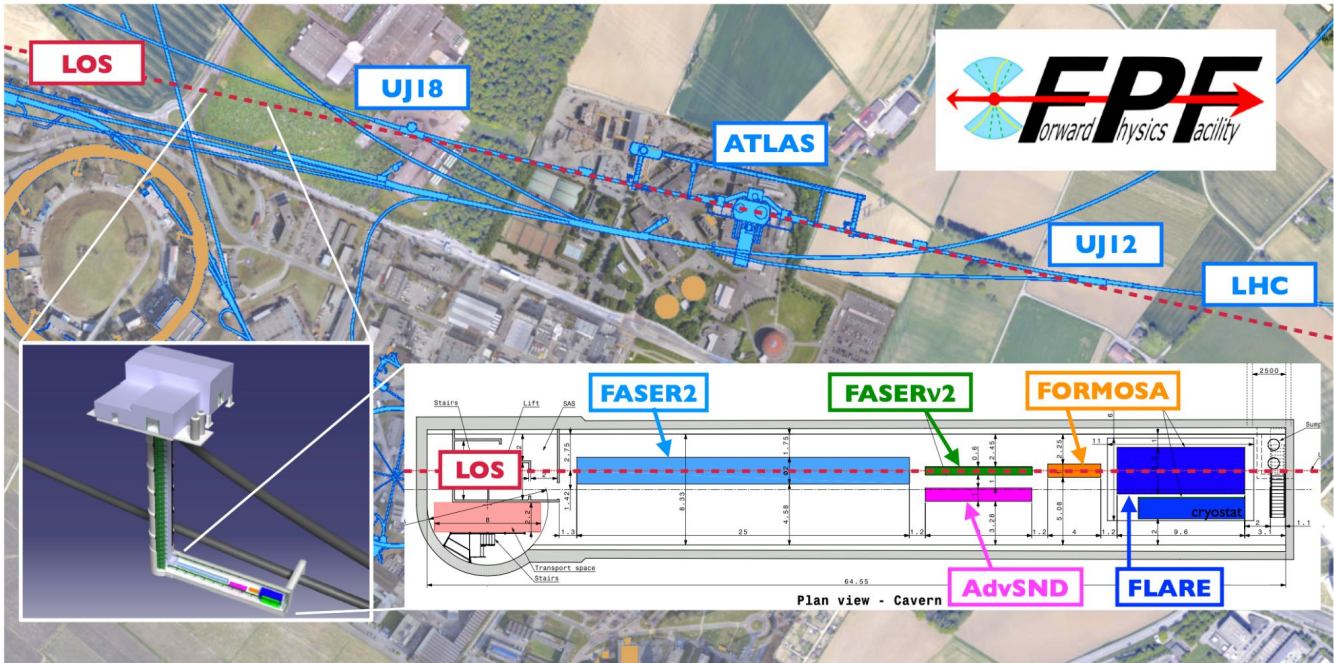
... many more to come.

First measurements performed ...



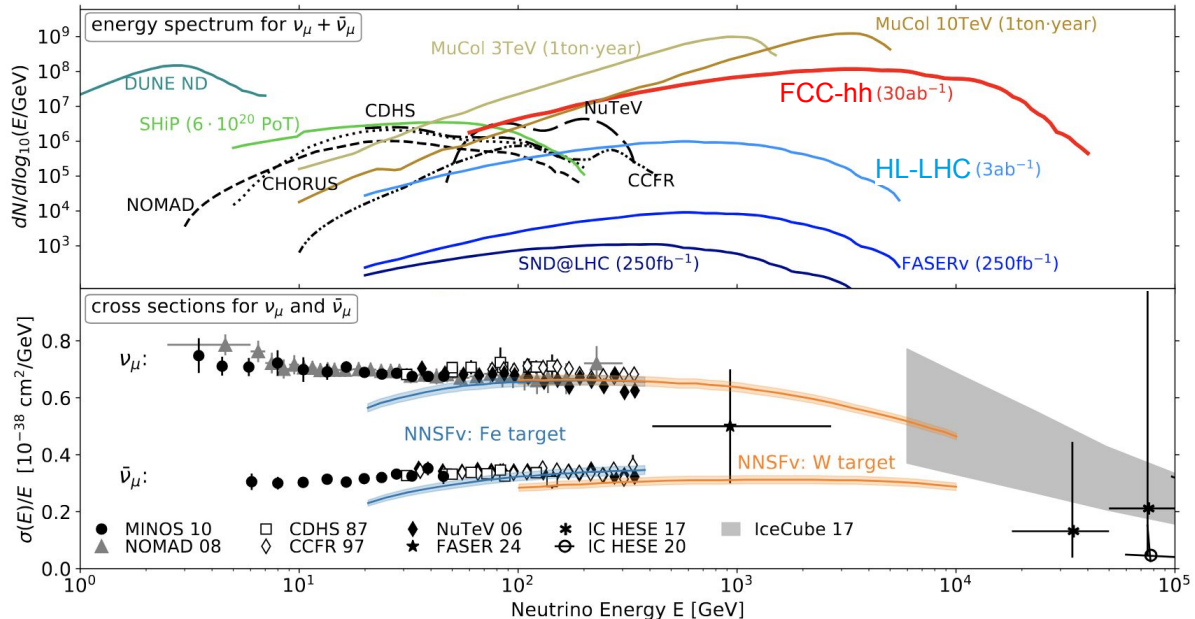
Forward Physics Facility.

Extension of this program via a dedicated **Forward Physics Facility (FPF)**.
Plans and updates summarized in [\[2503.19010\]](#).



Future Colliders.

Great potential for forward neutrino measurements and searches also
 muon collider [IMCC, [2407.12450](#)] and FCC-hh [Abraham et al, [2409.02163](#)]

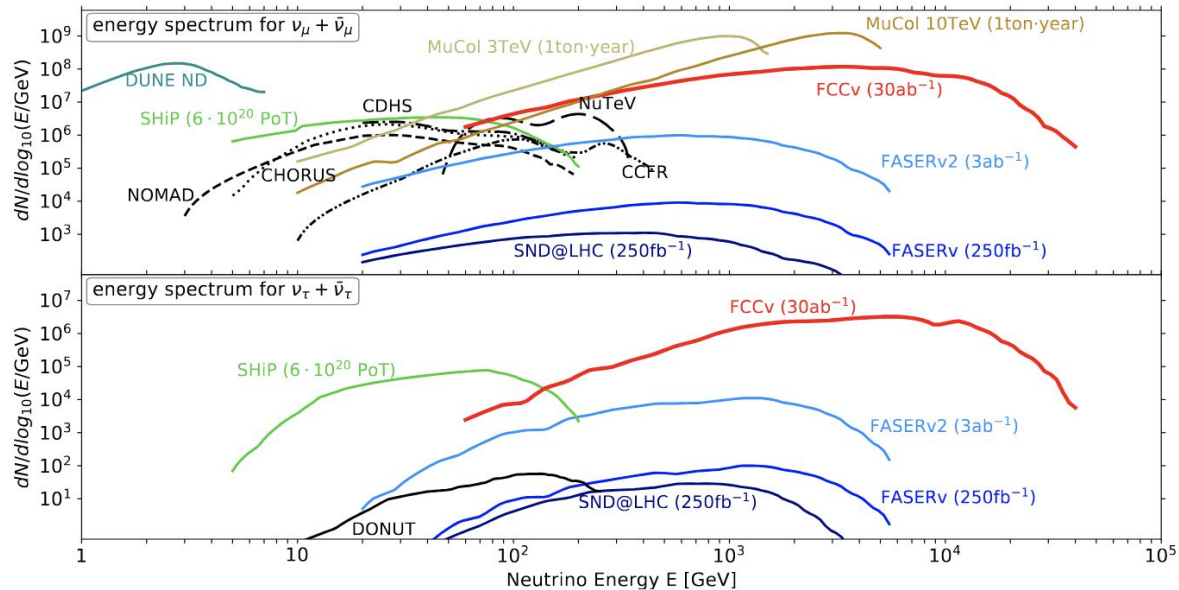


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 PDFs at $x \sim 10^{-9}$, polarized PDFs, nuclear PDFs, neutrinos from heavy ions

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Discussed in various future collider documents: [[2504.02634](#)] and [CERN-FCC-PHYS-2025-0002]