

# Status of HALHF - a concept for a hybrid asymmetric linear Higgs factory

*Thursday 18 July 2024 11:30 (15 minutes)*

The HALHF concept utilises beam-driven plasma-wakefield acceleration to accelerate electrons to very high energy and collide them with much lower-energy positrons accelerated in a conventional RF linac. This idea, which avoids difficulties in the plasma acceleration of positrons, has been used to design a Higgs factory that is much smaller, cheaper and greener than any other so far conceived. The talk will outline the original design, discuss the challenges of doing physics with a significantly boosted final state and describe a number of possible energy and facility upgrades. Finally the current status of the design will be given, including possible evolution in several parameters and next steps towards a more optimised design that can form the basis for a pre-Conceptual Design Report.

## Alternate track

### I read the instructions above

Yes

**Author:** FOSTER, Brian (University of Oxford (GB))

**Co-authors:** Dr LINDSTROEM, Carl (University of Oslo); Prof. D'ARCY, Richard (University of Oxford)

**Presenter:** FOSTER, Brian (University of Oxford (GB))

**Session Classification:** Accelerators: Physics, Performance, and R&D for future facilities

**Track Classification:** 11. Accelerator: Physics, Performance, and R&D for Future Facilities