

eeFACT 2025 - 70th ICFA Advanced Beam Dynamics Workshop on High Luminosity Circular e+e-Colliders



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AI for FCCee - what will it bring and what needs to be prepared

Thursday 6 March 2025 17:10 (30 minutes)

The Future Circular Collider (FCC) study at CERN is developing designs for the next generation particle colliders to follow on from the Large Hadron Collider after its High-Luminosity phase. A new tunnel of about 90 km circumference would initially house an electron-positron collider, the FCC-ee, with a research programme of 15 years followed by a hadron collider, the FCC-hh, with a programme until the end of the century. The report on FCC feasibility has just been finalised. It investigated technical and financial viability with special emphasis on efficiency and sustainability. This talk will summarise the required paradigm shift for designing, building and exploiting accelerators at the scale of the FCC and introduce why AI will be a key technology. AI adoption is still in its early days in the accelerator community, but full exploitation of AI will have to be demonstrated within the next decade to reach sufficient maturity and allow adequate design choices for infrastructure of the FCC. This crucial R&D has to be launched on existing accelerators and facilities. The talk will conclude with what is ongoing at CERN in this direction and what still needs to be addressed.

Footnotes

Funding Agency

I have read and accept the Privacy Policy Statement

Yes

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Session Classification: Machine learning and automatic tuning

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