

Christophe Grojean & Patrick Janot

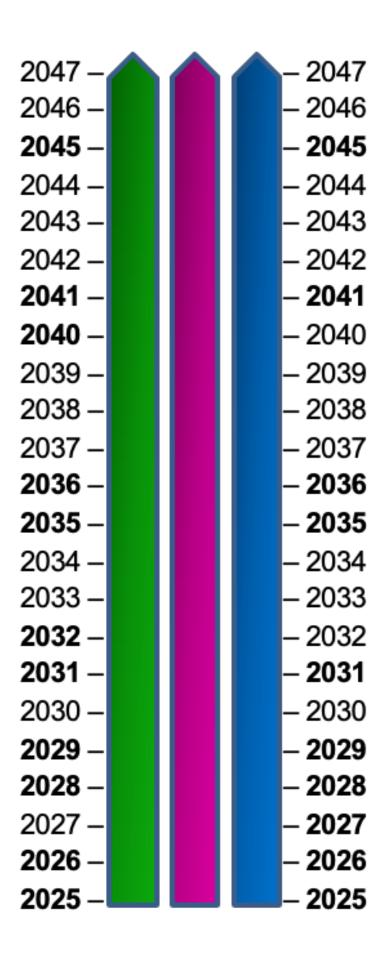
FCC PED coordinators

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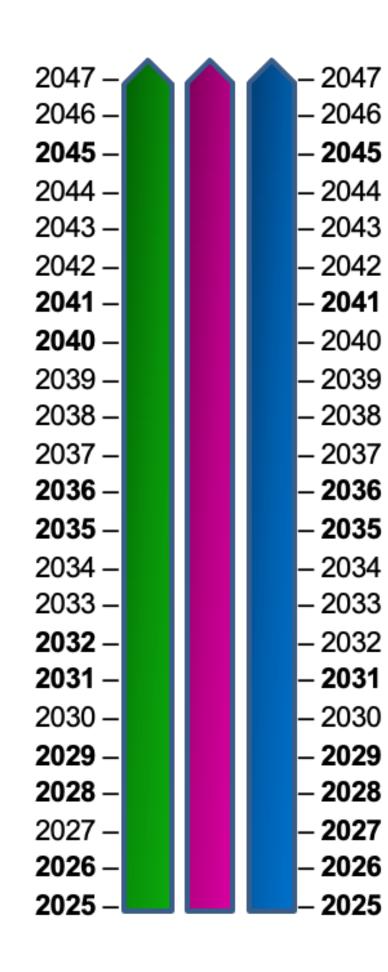
FCC on a Fast Track

After just over a decade of pioneering and fascinating work, huge progress has been achieved altogether:

- The first proposal of a high-luminosity e⁺e⁻ circular collider to study the Higgs boson was made **twelve years** ago (December 2011) and submitted to the 2012-13 European Strategy Update [A. Blondel & F. Zimmermann following discussions with P. Janot at CERN cafetaria on a bright summer night speculating on the rumours of a Higgs at **140 GeV**];
- The Future Circular Collider collaboration was created **ten years** ago, towards the conceptual design study of a **100 TeV pp collider**, with an e⁺e⁻ Higgs factory as a potential intermediate step;
- The Conceptual Design Reports of the FCC physics case, and of the FCC-ee and FCC-hh colliders, were published five years ago and submitted to the 2018-19 European Strategy Update;
- The CERN Council updated the European Strategy three years ago, stating that an e+e- Higgs factory would be the highest priority next collider, to be followed by a proton-proton collider at the highest achievable energy;
- Two years ago, the CERN Council consequently initiated and funded a technical and financial feasibility study for FCC with focus on an e⁺e⁻ electroweak and Higgs factory as a first stage, study to be completed by the time of the next European Strategy Update;
- Five months ago, a 700+ pages mid-term report about the FCC feasibility was submitted to the CERN Council for a thorough review, with a conclusion expected at the beginning of 2024. Very positive feedback from CERN council in Feb. 2;
 - 200+ of us joined this week at MIT to push this project forward!



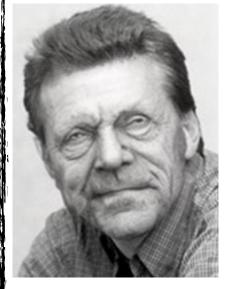




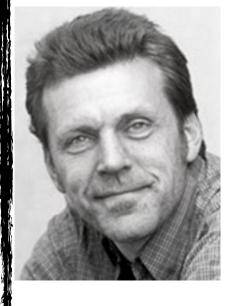




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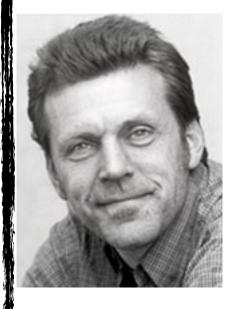


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FCC on a Fast Track







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	US collider R&D studies		2027	European Strategy Update
		2025 –	- 2025	Detector EoI submission by the community

FCC-ee Accelerator

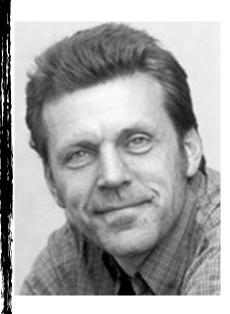
Key dates

FCC-ee Detectors

FCC on a Fast(er) Track









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Start accelerator commissioning	2045 —	- 204	Start detector commissioning
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End of HL-LHC operation	2041 –	- 204	Start detector installation
Start accelerator installation	2040 —	– 204	0
	2039 –	– 203	9
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	2037 –	– 203	
Start accelerator component production	2036 –	² 203	Start detector component production
Technical design & prototyping completed	2035 —	– 203	Four detector TDRs completed
	2034 –	– 203	34
	2033 –	– 203	
Ground-breaking and start civil engineering	2032 —	– 203	
Start engineering design	2031 –	_ 203	Detector CDN3 (>4) Submitted to 1 C
	2030 –	- 203	
Completion of HL-LHC: more ATS personnel available	2029 –	– 202	Completion of HL-LHC upgrade: more detector experts available
FCC Approval, R&D, start prototyping	2028 —	-202	FC ³ formation, call for CDRs, collaboration forming
	2027 –	– 202	
US collider R&D studies	2026 —	– 202	
FCC Feasibility Study Report	2025 –	202	European Strategy Update

FCC-ee Accelerator

Key dates

FCC-ee Detectors

Moving Forward Together

Roundtable on Monday:

"It's been noted that many of the most intellectually interesting FCC-related projects are already highly subscribed."

Don't panic!

There are plenty of opportunities to contribute and they need everyone's inputs.

We definitively need you (not on a 4th detector but everywhere)!

I'm very happy to see the FCC community being formed and already growing fast.

I'm envy you too:

what I witnessed at this meeting is a large group of physicists acting coherently with full energy and enthusiasm.

Many intellectual challenges ahead of us —

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What we have been discussing so far:

- 3 detectors concepts;
- 3 calorimeters;
- (1) 2 (silicon) trackers;
- 1 vertex detector;
- 0.5 luminometer.
- → definitively not enough for 4 detectors;
- → any new idea is desperately welcomed.

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- A depth of interconnections between all FCC-ee runs, as pertains to exploring new physics, is emerging.
- FCC-ee is not a re-run of LEP.

[M.McCullough on Monday]

Stronger Together*

Old generation with young generation.

(I encourage you to go and talk to the young students starting college!)

TH with EXP.

(I encourage you to get in touch with your theory colleagues!)

ACC with PED.

US with EU/rest of the world.



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See You Soon Again

https://fccweek2024.web.cern.ch/

A great opportunity to develop our collaboration further.



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And last but not least:



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And last but not least:

After BNL last year, MIT this year, I wish to see all of you (and many others) in **Chicago** at the 3rd US FCC meeting!



THANK YOU ALL

