

Goals of the Workshop

- **Get together in person for the 1st time in three years**
 - ◆ 3rd FCC physics workshop: 13-17 Jan 2020
 - In person at CERN
 - ◆ 4th FCC physics workshop : 10-13 Nov 2020
 - Remote only
 - ◆ 5th FCC physics workshop : 7-11 Feb 2022
 - Foreseen to be in person (Liverpool), became remote only
 - ◆ 6th FCC physics workshop: 23-27 Jan 2023
 - In person in Krakow
 - First in-person physics workshop in the FCC FS era
 - 190 participants – of which 75-80 in person
- **Strengthen the Physics/Experiments/Detector community**
 - ◆ Share experience with newcomers
 - ◆ Synergy with Snowmass and ECFA Workshops



Goals of the Workshop

- **Monitor the PED progress since the beginning of the FCC Feasibility Study**
 - ◆ Physics Programme: Electroweak, Higgs, Top, Flavours, QCD, BSM
 - ◆ Detector requirements, Detector concepts and Machine-Detector Interface
 - ◆ Centre-of-mass energy calibration, polarisation, monochromatisation
 - ◆ Physics software and computing

- **Plan and prepare our contribution to the FCC FS mid-term review report**
 - ◆ Main mid-term review PED deliverables, with current focus on FCC-ee
 - FCC-INT physics case consolidated (w/ specificities and complementarities of both colliders)
 - Theoretical calculation improvement strategically planned
 - Main detector requirements documented
 - Cost drivers for detector construction and operation evaluated
 - See <https://www.overleaf.com/read/tqshqcrkknmh> for more details

 - ◆ A lot more to explore and document beyond these compulsory deliverables

Goals of the Workshop

- **A lot more to explore : preliminary to-do list - to be amended and completed**
 - ◆ Document the (physics) arguments for having 2 or 4 interaction regions
 - Includes carbon footprint, plus all arguments we developed a couple years ago
 - ◆ Requirements from detectors on experimental sites
 - e.g, position of the booster, need of a secondary cavern, services, etc.
 - ◆ Cost drivers and estimates for detectors
 - ◆ Required detector R&D
 - ◆ Common software framework and computing infrastructure
 - E.g., plug-and-play, analysis framework, etc.
 - ◆ International community building
 - With, in particular, the Informal Forum of National Contacts (IFNC)
 - ◆ FCC-hh detector concept
 - ◆ Etc.

- **To be amended and completed during this and the next workshops**

Mid-term review report: a tight calendar



M. Benedikt

FCC mid-term review - technical deliverables:

FCC Scientific Advisory Committee acts as reviewing body

- 5/6 December 2022 First SAC meeting, full day of overview presentation of FCC FC and ½ day closed session with study management, working methodology of SAC
- March 2023 SAC meeting to discuss detailed planning for submission of individual deliverables and responsibilities inside SAC
- 5 – 9 June 2023 FCCW Presentations of major part of deliverables, interaction with study management
- End September 2023 All deliverables available in final form for SAC.
- Begin October 2023 SAC mid-term review meeting with all deliverables, interaction with FCC management and launch of SAC review report preparation
- End October 2023 SAC report available for SPC
(SPC = Scientific Policy Committee)

← We are here

← Most deliverables ready by the FCC week

SAC PED Reviewers

- Roberto Tenchini
- Belen Gavela
- Katri Huitu
- Peter Krizan

Towards the mid-term review report

- **A short document for the CERN Council perusal at the end October 2023**
 - ◆ **Skeleton soon to be made available**
 - **Andy Parker (FCC SAC chair) will be the editor**

- **Only a few pages for Physics, Experiments, and Detectors**

- **We need to document first our work in detail with several FCC Notes**
 - ◆ **And summarize it all in the short mid-term report document**
 - **See presentations of the work-package coordinators on Friday for the plans forward**

ENJOY THE 6th FCC Physics Workshop in Krakow !