



CAHIER D'ACTEUR

Concertation publique suisse
du Futur Collisionneur Circulaire

CHIPP, founded in 2003, is the association representing the Swiss particle, astroparticle and nuclear-physics community. It brings together more than 500 researchers from the Universities of Basel, Bern, Geneva and Zurich, EPFL, ETHZ and the Paul Scherrer Institute, as well as Swiss nationals with a PhD working at CERN. CHIPP coordinates Swiss participation in international projects, supports research and teaching activities, and represents the Swiss particle community in national and international bodies.

The point of view of CHIPP

In brief, what is CHIPP's position?

The Swiss Institute of Particle Physics (CHIPP) supports pursuing CERN's Future Circular Collider programme, beginning with FCC-ee and followed by FCC-hh. FCC-ee would offer a unique opportunity to explore fundamental questions in particle physics through unprecedented precision studies of the Higgs boson and the electroweak sector, together with a broad programme of searches for new phenomena. This position reflects a rigorous, multi-year consultative process across the Swiss and international particle-physics communities, and FCC-ee has been identified as the preferred option for CERN's next flagship collider. CHIPP believes that this scientific ambition must be pursued alongside a careful and transparent assessment of technical feasibility, financing, energy use and environmental impacts, and with due consideration for the interests of the communities that would host the facility.

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Why CHIPP supports pursuing the Future Circular Collider

A unique scientific opportunity

The discovery of the Higgs boson at the LHC completed the particle content predicted by the Standard Model, but fundamental questions remain open. The Standard Model does not explain, among other things, the nature of dark matter, the matter-antimatter asymmetry of the Universe or the origin of neutrino masses. FCC-ee would provide a clean electron-positron collision environment and very large samples of Z and W bosons, Higgs bosons and top quarks. This would enable precision studies of the Higgs and electroweak sectors, flavour and top physics, while also searching for new phenomena through rare processes, deviations from Standard Model predictions and direct searches for new particles.

A long-term scientific programme

FCC-ee would extend the scientific programme beyond the High-Luminosity LHC and could form the first stage of a longer-term FCC programme using the same tunnel and infrastructure. CERN has an important precedent: LEP operated from 1989 to 2000 as a precision electron-positron collider, and its 27-km tunnel was subsequently reused for the LHC. The FCC programme follows a similar long-term logic, with FCC-ee as the first scientific programme and the possibility of a later higher-energy hadron collider.

A position developed by the Swiss community

CHIPP's position has been developed through successive community strategy exercises. The CHIPP Community Roadmap 2024 followed earlier CHIPP roadmaps dating back to 2004. Building on it, CHIPP held dedicated strategy discussions in 2025, including an early-career workshop. The Swiss input to the 2026 European Strategy was reviewed by the CHIPP plenary and approved by the CHIPP Board in March 2025. It records CHIPP's support for the FCC programme beginning with FCC-ee and followed by FCC-hh. The position expressed here therefore reflects a documented community process rather than a view formulated specifically for the present consultation.

CERN and Switzerland: more than seventy years of shared history

Switzerland was one of CERN's twelve founding Member States in 1954 and, together with France, is one of its two Host States. Swiss scientists were closely involved from the beginning: Paul Scherrer chaired the first meeting of the provisional CERN Council in 1952, and Swiss-US physicist Felix Bloch became CERN's first Director-General. Generations of researchers from Swiss institutions have since contributed to CERN's accelerator, collider, neutrino, fixed-target and antimatter programmes. CERN has in turn given Swiss students, physicists, engineers and technicians access to facilities and collaborations that no individual country could provide on its own.

The broader value of fundamental research

Fundamental research expands our understanding of nature and is an important part of society's long-term investment in knowledge. Its impact extends beyond the questions that originally motivate it: pursuing ambitious scientific goals drives new technologies and methods, develops highly skilled people and strengthens international cooperation, often with benefits that could not have been anticipated when the research began.

Technology, skills and training

Participation in major international facilities maintains expertise in accelerator science, detector technology, precision theory, computing and data analysis. These activities train scientists, engineers and technicians and stimulate technological developments that can find applications beyond particle physics. The long timescale is especially relevant for today's students and early-career researchers, who would be among those designing, constructing and operating the experiments of the FCC era.

Scientific ambition and environmental responsibility

The scale of the FCC implies substantial environmental, energy and territorial impacts. CHIPP considers these concerns legitimate and important. Construction, material and land use, excavated material, electricity consumption, water resources, biodiversity and impacts on neighbouring communities must be assessed transparently. Minimising these impacts should remain an integral part of the design and an important criterion in decisions concerning the project. The present public consultation is therefore an important part of the process.

Conclusion

CHIPP's support for pursuing the FCC programme is grounded in a community process extending from the CHIPP Roadmap to the Swiss input to the European Strategy for Particle Physics. The scientific motivation is the opportunity to address fundamental open questions through a broad programme of precision measurements and searches, while preserving a long-term accelerator and experimental programme at CERN. At the same time, development of the project must proceed with careful scrutiny of technical feasibility, financing, energy use and environmental and territorial impacts. CHIPP will continue to contribute its scientific and technical expertise to this process and to an open dialogue.

Sources [1] [CHIPP website and organisation](#) [2] [CHIPP Community Roadmap 2024, Swiss Academies Reports / SCNAT](#) [3] [Swiss inputs to the 2026 update of the European Strategy for Particle Physics, CHIPP, March 2025](#) [4] [European Strategy for Particle Physics, 2026 Update](#) [5] [FCC Feasibility Study Report, CERN, 2025](#)