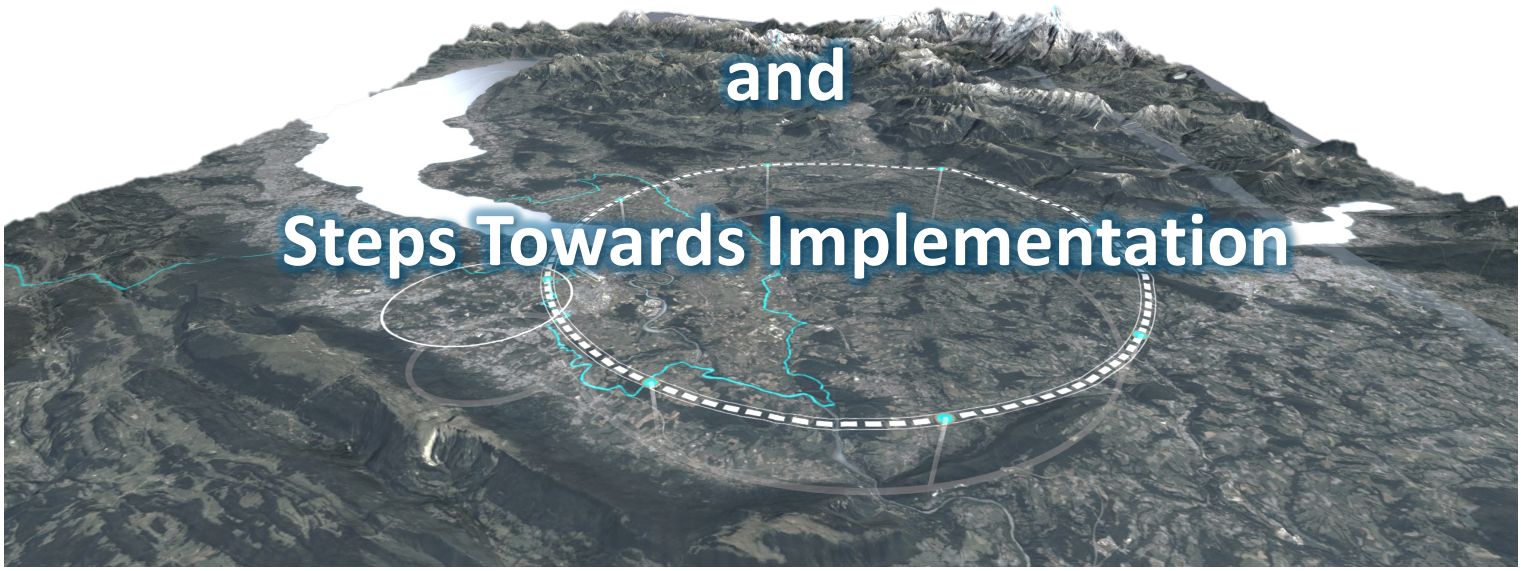
UTokyo

ICEPP Seminar

ICEPP The University of Tokyo

Key Results of the FCC Feasibility Study and Steps Towards Implementation



2026年1月8日（木）
16:00 - 17:30

東京大学本郷キャンパス
理学部１号館　２０７号室

Michael Benedikt
(Prof., CERN)

Frank Zimmermann
(Prof., CERN)

Abstract :

The proposed Future Circular Collider (FCC) integrated programme consists of two stages: An electron–positron collider serving as a highest-luminosity Higgs-boson, electroweak and top-quark factory, followed by a proton–proton collider with a collision energy around 100 TeV. In 2021, the CERN Council launched the FCC Feasibility Study. This study covered, inter alia, physics objectives and potential, geology, civil engineering, technical infrastructure, territorial implementation, environmental aspects, R&D needs for the accelerators and detectors, socio-economic benefits, and cost. The Feasibility Study was completed end of March 2025. The subsequent European Strategy Symposium in June 2025 has singled out the FCC as the preferred future collider option for CERN.

After reviewing physics motivations and performance goals, this talk will focus on the preparations for implementation, infrastructure, detector developments, accelerator design, and technology R&D covering, e.g., both superconducting and warm radiofrequency (RF) systems, efficient RF power sources, and magnets based on high-temperature superconductor. The importance and impact of international collaboration are highlighted.