Expanding our Horizons

26 August 2026 to 4 September 2026

CERN

Scientific Programme

The school will consist of :

1. Lecture series on a broad set of topics related to future colliders during morning sessions.
2. Topical discussion session on focused topics
3. Hands on group activities and exercises

Registered participants will be allowed to submit questions that they would like to see discussed in one of the above sessions.

While a detailed agenda is being put together, Lecture series will include discussion on :

1. Theory, Standard Model, Flavor Physics, Beyond the SM, Nuclear physics
2. Detector simulation
3. Detectors for future colliders and associated technology
4. Accelerator technologies
5. Trigger and data acquisition
6. Object reconstruction
7. How physics requirements drive detector design
8. Machine Detector Interfaces
9. Software and Computing
10. Connections between HEP and NP
11. Energy calibration / resonant depolarization
12. and others.. please feel free to suggest what you would like to hear further on any of the topics listed above or more.

The afternoon topical discussions will focus on a number of topics, including:

1. How AI is shaping our field
2. What about them neutrinos?
3. Non-Collider particle physics including cosmology and how it influences/complements physics at future colliders.
4. Topical presentations on novel detector technologies
5. Science communication (see example)
6. Discussion on challenges with systematic uncertainties
7. Challenges at operation at the FCC Z-pole
8. Community organization (european strategy, P5)
9. Early career discussion - career pathways, how to get involved in future colliders
10. Machine -detector protection (EIC/Belle II)
11. Polarization in accelerators
12. Interested is something else? Please submit your question/comments.

There will be group activities planned including:

1. Open Q&A session on the FCC
2. Quizzes to focus discussion topics.
3. Software Tutorials and analyses exercises
4. Potential projects on integrated detector design.