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Croatian HEP community input to the European Strategy for Particle Physics update 12 Dec - 12 Feb

Organized by Division of Experimental Physics (Odsjek za eksperimentalnu fiziku)

Closed

Survey

Results for "CROHEP survey"

20 people responded to this survey

Your academic level

Answered: 20

A. Doctoral student: 3 (15.00%)
B. Postdoc: 2 (10.00%)
C. Junior faculty/staff scientist (bio.(mas. suradnik): 5 (25.00%)
D. Senior faculty/staff scientist (izv. prof./viši znan. suradnik and above): 9 (45.00%)

Your area of research

Answered: 20

A. Theory: 5 (25.00%)
B. Experiment: 15 (75.00%)

Do you work on collider phenomenology and/or collider experiments(s)?

Answered: 20

A. Yes: 12 (60.00%)
B. No: 8 (40.00%)

If no, what is your field of research? (optional)

Answered: 5

Neutrino Physics
Flavor physics
Neutrino Physics
Neutrino
Instrumentation

Questions on collider projects

1) Which is your preferred next major/flagship collider project for CERN?

Answered: 20 Skip: 0

A. FCC (FCC-ee and/or FCC-hh), lower collision-E (LE), energy recovery
B. Linac, then e+e- linear collider, plasma accelerators, long-baseline neutrino beam or other alternative

muon collider
FCC
FCC
Long-baseline neutrino beam
I think one has to carefully weigh all options. FCC, CLIC, ILC or 500 Gev com and upgrade, and muon collider are all viable
CLIC
FCC-ee and FCC-hh
FCC
FCC-ee
FCC
FCC-hh
undecided
LHeC
FCC-ee and FCC-hh
long-baseline neutrino beam
long-baseline neutrino beam
muon collider
neutrino beam (long and short baseline)
FCC-ee and FCC-hh
FCC, neutrino

2) What are the main factors driving your choice in 1)?

Answered: 20 Please select up to 3 items

A. Physics potential: 20 (100.00%)
B. Long-term perspective: 12 (60.00%)
C. Financial and human resources: requirements and effect on other projects: 7 (35.00%)
D. Timing: 3 (15.00%)
E. Careers and training: 4 (20.00%)
F. Sustainability: 3 (15.00%)

a) Japan decides to proceed with the ILC in a timely manner

Answered: 20

A. Yes: 4 (20.00%)
B. No: 16 (80.00%)

If yes, what would your new choice of flagship project be, and why?

Answered: 4

FCC-hh, another type of accelerator should allow broader research
FCC-hh

b) China decides to proceed with the CEPC on the announced schedule?

Answered: 20

A. Yes: 3 (15.00%)
B. No: 17 (85.00%)

If yes, what would your new choice of flagship project be, and why?

Answered: 4

Something other than FCC and CLIC as CEPC seems to align with the physics reach of both
FCC-hh
muon collider
This would be a complicated situation because the world does not need two FCC like colliders and in that case CERN could become a European hub for remote operations and data analysis on CEPC data. Locally, CERN would maintain its existing accelerator infrastructure and use it for test beams, neutrino physics, fixed target experiments, etc.

c) The US decides to proceed with a muon collider?

Answered: 20

A. Yes: 4 (20.00%)
B. No: 16 (80.00%)

If yes, what would your new choice of flagship project be, and why?

Answered: 4

FCC-hh

d) there are major new (unexpected) results from the HL-LHC and/or other HEP experiments?

Answered: 20

A. Yes: 9 (45.00%)
B. No: 11 (55.00%)

If yes, what would your new choice of flagship project be, and why?

Answered: 4

FCC
Probably FCC, but depends on the theory implications of the unexpected result
Possible continuation of HL-LHC
That depends on the new results from HL-LHC
depends on what these results are
It depends on the nature of such unexpected results so it is hard to give a more concrete response.

4) What other accelerator R&D should be pursued in parallel with your preference in 1), and why? (e.g. high-field magnets, RF technology, alternative accelerators, colliders)

Answered: 8 Skip: 12

All areas of the R&D should be pursuit. In particular on the magnets and accelerator technologies (including RF)
I cannot decide on this
high-field magnets, alternative accelerators
High-field magnets, useful in wide range of fields and applications
Alternative accelerator technology
newer hrsm systems to reduce the neutrino flux contamination and compatible with higher beam powers
alternative accelerators/colliders
monitored neutrino beam production beamline
- High-field magnets for possible cost reduction of FCC-hh or potential applications in other areas - Alternative accelerator technologies because the FCC tunnel could be re-used for other types of accelerators in the future

5) What would be your preferred alternative flagship project(s), in order of preference, if 1) is not feasible due to e.g. cost, timing, international developments, etc.?

Answered: 12 Skip: 8

ILC
FCC
I stayed very vague. I have the feeling not all options are compared in a fair manner at the moment.
FCC, neutrino beam.
1.) CLIC, 2.)Muon Colliders, 3.) Plasma accelerators
we must build new accelerator regardless of cost or international developments
gravitational wave observatory
Muon collider
Linear collider and muon collider
long-baseline neutrino beam
muon collider
None of the collider projects other than FCC seem sufficiently technology-ready to ensure a smooth transition after the HL-LHC. It also greatly depends on the status of CERN.
linear collider

6) What are the main factors driving your choice in 5)?

Answered: 20 Please select up to 3 items

A. Physics potential: 12 (60.00%)
B. Long-term perspective: 8 (40.00%)
C. Financial and human resources: requirements and effect on other projects: 3 (15.00%)
D. Timing: 3 (15.00%)
E. Careers and training: 3 (15.00%)
F. Sustainability: 0 (0.00%)

Questions on non-collider projects

7) What other areas of physics should be pursued, and with what relative priority?

Answered: 12 Skip: 8

Neutrino Physics
Neutrino physics with high priority
neutrino physics
Neutrino physics. Neutrino physics is the only experimental proof of physics beyond standard model (BSM). The continuous data from neutrino experiments shaping the path for BSM physics including CP violation in leptonic sector and physics beyond standard three flavour scenario. So CERN should pursue neutrino physics with a very high priority.
Nuclear physics, with the aim of achieving controlled fusion.
Neutrino physics
Medical physics.
Antiparticle physics, solid state
Quantum physics, gravitational waves
Antiparticle physics, neutrinos and other particles from space Gravitational waves
Neutrino Physics
Neutrino physics
Neutrino physics Quantum technologies

8) What are the main factors driving your choice(s) in 7)?

Answered: 20 Please select up to 3 items

A. Physics potential: 12 (60.00%)
B. Long-term perspective: 11 (55.00%)
C. Financial and human resources: requirements and effect on other projects: 1 (5.00%)
D. Timing: 2 (10.00%)
E. Careers and training: 5 (25.00%)
F. Sustainability: 3 (15.00%)

9) To what extent should CERN participate in areas of science other than particle physics (e.g. nuclear physics, astroparticle physics, or any other field aligned with the CERN Convention)? Please use the current level and form of activity as a baseline for comparison.

Skip: 0

More or less as at baseline, current level.
Some complementarity participation in nuclear physics which can help the studies in particle physics will be useful.
I think CERN should focus on particle and collider physics. This is their expertise, and they should not venture away. A closer interaction of the TH department with hadron collider projects would be desirable.
Current level is fine.
Neutrino physics. CERN can do the same, even better than, FNAL for using its accelerator facilities for delivering neutrino beams of quality.
Should be much more involved then what it is now
With at least 20% of its overall effort
I think CERN should be very active in these fields.
This really depends on whether FCC goes forward or not. Either way, a strong focus on development and application of advanced machine learning (ML) algorithms for data analysis should be pursued such that CERN becomes a global hub and center of excellence for machine learning, in collider data analysis.