

European Strategy for Neutrino Oscillation Physics -- II

A neutrino town meeting to prepare the input to the European Strategy for particle physics

Dear Colleagues involved in Neutrino Oscillation Physics,

We have the pleasure to invite you to a 3-day workshop at CERN on May 14-16 2012 to consider the future of neutrino oscillation physics in Europe. The aims of the workshop will be to prepare the input to the CERN strategy process that will happen in September 2012 – early Summer 2013. The workshop is organized jointly by the CERN Management, and the leaders of the ongoing development effort and neutrino experiments. This workshop continues the effort of the workshop that was held at CERN on October 1-3, 2009 [1].

The European Strategy for Particle Physics in 2006 concluded with:

“4. [...] it is vital to strengthen the advanced accelerator R&D programme; a coordinated programme should be intensified, to develop the CLIC technology and high performance magnets for future accelerators, and to play a significant role in the study and development of a high-intensity neutrino facility.

6. Studies of the scientific case for future neutrino facilities and the R&D into associated technologies are required to be in a position to define the optimal neutrino programme based on the information available in around 2012; Council will play an active role in promoting a coordinated European participation in a global neutrino programme. (CERN strategy document, 2006)”

Substantial progress has been made since 2006. The future common strategy in Europe must take into account recent results of neutrino experiments, expectations from experiments presently taking data or already approved, results from design studies and proposals of possible facilities in Europe and elsewhere within a global context. The emphasis will be on long and short baseline neutrino oscillations, with attention to ancillary cross-section measurements and other physics accessible with the considered facilities. The following points need to be considered:

1. The European strategy process will consider the long term view, but will give guidelines for the next 5-6 years. European neutrino oscillation physicists should come up with a vision that encompasses a concrete short term plan. Are we in a position to propose such a vision and such a plan? Can it lead to propose a realistic facility with top level objectives, yet broad use and long term possibilities of development?
2. CERN is the established world leader in the high energy investigation. Nevertheless, Europeans have unique strengths to offer in neutrino oscillation physics and the physics is important enough to be addressed in different ways and places. In this context there could be space for a meaningful accelerator-based neutrino program in Europe. Do we have something realistic to propose that would allow a practical realization?

The output of the workshop will be a 3-4 pages summary statement supported by a roadmap document. Information can be best given in advance by contributed documents by interested groups or individuals.

The program committee will meet on April 2-3 2012 to work on a first preparatory document based on your input. In order to ease the preparation of a draft summary and of the roadmap, documents should be uploaded by March 26 2012 on the workshop's website http://indico.cern.ch/event/neutrino_town.

The workshop is open to everyone but registration is required for organizational reasons. The slides presented at the workshop will be assembled to form Proceedings. Your suggestions for the organization or program of the workshop are highly welcome.

Alain Blondel for the Local Organizing Committee and the Program Committee

Local organizing committee

Sergio Bertolucci
Alain Blondel (Chair)
Dominique Duchesneau
Fanny Dufour
Ilias Efthymiopoulos
Edda Gschwendtner
Patricia Mages
Federico Petrollo
Ewa Rondio
André Rubbia
Elena Wildner

Program Committee

Sergio Bertolucci
Alain Blondel
Anselmo Cervera
Andrea Donini
Marcos Dracos
Dominique Duchesneau
Fanny Dufour
Rob Edgecock
Ilias Efthymiopoulos
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Yury Kudenko
Ken Long
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Mauro Mezzetto
Silvia Pascoli
Vittorio Palladino
Ewa Rondio
Andre Rubbia
Carlo Rubbia
Achim Stahl
Jenny Thomas
David Wark
Elena Wildner
Marco Zito

Some references (will be completed on the Workshop web site)

1. [CERN Yellow report 2010-003 \(Proceedings of 2009 Neutrino Town Meeting\)](#)
2. [NUFACT11 Workshop](#)
3. [NNN11 workshop](#)
4. [Workshop on Fundamental Physics at the Intensity Frontier](#)
5. [R. Edgecock: "Future R&D Experiments for SB, NF & BB" at NUFAC 11](#)
6. [I. Efthymiopoulos: "Present and possible future nu-beams at CERN" at NNN 11](#)
7. [A. Rubbia: "Long-baseline Neutrino Beam Options at CERN" at NUFAC 11](#)
8. [C. Tourmanis: "Status of LAGUNA / LAGUNA-LBNO" at NNN 11](#)
9. [CERN Yellow report 2004-002 \(ECFA/CERN Studies of a european neutrino factory complex\)](#)
10. [IDS-NF interim report](#)
11. [ISS reports](#)
12. [Beta Beam: Elena Wildner at NNN11](#)
13. [SuperBeam at Frejus and the MEMPHYS project](#)
14. ECFA neutrino panel review: [talk](#) and [report](#)
15. SPSC proposals for short baseline sterile neutrino search:
CERN-SPSC-2011-012; SPSC-M-773
CERN-SPSC-2011-030 SPSC/P343; arXiv: 1111.2242
16. SPSC proposals: CERN-SPSC-2011-033; SPSC-P-345
D. Angeli et al., "Towards a new liquid argon imaging chamber for the MODULAR project", JINST 4 P02003 (2009)
B. Baibussinov et al., "A new very massive modular Liquid Argon Imaging Chamber to detect low energy off-axis neutrinos from the CNGS beam (Project MODULAR)", Astroparticle Physics 29 (2008) 174–187