

Summary of The NuFact15 SPC Meeting – 14 August 2015

Here is the section of the summary of the NuFact15 SPC meeting relevant to the question of frequency of NuFact workshops.

WHEN IS THE NEXT NUFAC? WHAT ARE THE GOALS OF NUFAC? The topic regarding the frequency of NuFact workshops had been discussed amongst smaller groups at coffee breaks and lunches over the course of this NuFact and became an important point of discussion at the SPC meeting. It should be pointed out that the question of the frequency of NuFacts has been a topic brought up at many of the past NuFact SPC meetings.

In considering the frequency of NuFact workshops, an associated point was re-evaluating the goals of the NuFact workshops. This is a topic that invites further exchanges of ideas via e-mails. At the workshop this discussion was sometimes referred to as "Putting the Neutrino Factory back in NuFact" and was the drive behind Alan's plenary talk and subsequent panel discussion in the Monday afternoon session. The idea of promoting an international collaborative effort toward the goal of post-DUNE/HyperK neutrino experimentation using a non-traditional beam is being pushed also by Ken Long who summarized the idea in his plenary concluding the workshop.

Living with the realities of funding and manpower for "Neutrino Factory" type efforts in the face of DUNE/HyperK needs suggests living on reduced budgets that could slowly grow as DUNE / HyperK needs are met. This in-turn suggests that consequent limited progress in the efforts toward the goals of the NuFact workshop would be more consistent with a two-year or at least 18-month frequency of the workshops. The idea of having NuFact workshops every other year alternating with the big Neutrino conference was considered favorably by many attending the meeting in person with others favoring an 18 month cycle similar to the NuInt workshop.

There were two SPC members joining the meeting by phone, Maury Goodman and Paul Soler, who were at a disadvantage hearing the discussion in the room. When asked, both favored maintaining the yearly frequency of workshops. Because of the problem with the phone connection I asked both to summarize their thoughts:

Maury's concerns were that, with big collaborations, it is nice to spread the talks around so having an annual meeting allows young people exposure in

international conferences. He also felt that as long as some people are willing to host the meeting and other people are willing to come, all the other arguments about conflicts and lack of progress don't matter. He's also of the opinion that traditions are good, that traditionally it has been yearly, and that to change requires a stronger reason than he heard.

Paul's main concerns (extracted from his e-mail) were that NUFACT is not "just" another neutrino meeting. In fact it is unlike any other meeting in the world, since it covers neutrino oscillation physics, neutrino interaction physics, accelerator physics and muon physics. If we add the neutrino theory session, it could become the premier yearly meeting, joining together all the accelerator-based neutrino and muon communities. He also thinks that the format of parallels and plenaries allows young people to get exposure, which is great for their careers. He noted that he could not hear from the floor that the accelerator community feels they cannot advance fast enough in the development of new ideas to set the schedule of a yearly NUFACT. Also, he believe that the number of accelerator physicists doing neutrino and muon work is less than 4-5 years ago (especially since MAP is being wound down), so it might be difficult to find enough of them to fill the schedule. This might be the most powerful argument in favor of having it every two years. He concluded by noting it interferes every two years with the neutrino conference, which we see is a problem next year since Neutrino is in July and ICHEP is in August so dates are difficult.

To initiate continued discussion, my conclusion from the arguments presented is tied to the question of what is and what are the goals of a "NuFact Workshop". If the NuFact series of workshops is really aimed at developing a program that looks toward the post-DUNE/HyperK era of neutrino experimentation with a non-standard neutrino beam then we are facing lean times both in finances and manpower suggesting a 2-year frequency is reasonable. This two-year cycle would also be consistent with the goal of developing an international collaborative R&D and physics effort ramping up as funds and manpower become available. If, on the other hand, the goal of this workshop is, using Paul's words, to become the premier yearly meeting, joining together all the accelerator-based neutrino and muon communities then a yearly meeting is reasonable. However should we call such a meeting a NuFact Workshop?

From: "Jorge G. Morfin" <morfin@fnal.gov>
Subject: Determining the frequency of future NuFact workshops.
Date: October 1, 2015 at 10:43:05 AM CDT

Dear Colleagues,

Three weeks ago a summary of our NuFact15 SPC meeting was sent to you. The summary included a review of the discussion on the frequency of future NuFact Workshops with an invitation to continue the discussion via e-mail, if necessary, before taking a poll to determine the wishes of the SPC.

The poll is now set up to select the frequency giving you the three choices we have been discussing; a workshop every year, a workshop every 18 months alternating spring and fall or a workshop every two years in the year that the NEUTRINO Conference is not scheduled. Please enter your choice in the doodle poll
at: <http://doodle.com/poll/wp5i4cg8cexueyr8> before 12 October 17:00 CT.

From: Jorge G Morfin <morfin@fnal.gov>
Subject: Re: Determining the frequency of future NuFact workshops.
Date: October 13, 2015 at 7:30:04 PM CDT

Hello,

Isn't democracy wonderful?

The poll to determine the frequency of future NuFacts is closed with 23 out of 26 possible votes being cast. It is clear that the frequency will not be every 18 months. However, as the attached .pdf shows, (second .pdf in this message) the vote between "every year" or "every two years" is a tie vote of 11 votes each.

How to reach a decision? To start the discussion, we could look at this situation as being the history of NuFacts has been a workshop every year and there has not been a majority call to change this frequency... what are your thoughts?

Furthermore, this strong division within the SPC suggests we should also (re)consider the structure and goals of these workshops (should they still be "NuFacts"?) more carefully. Whichever frequency we choose, a large number wanted the other choice. Can we mold the structure and goals to reflect the concerns of the "other" choice?

From: Jorge G Morfin
Sent: Wednesday, October 21, 2015 10:57 AM
Subject: Re: Determining the frequency of future NuFact workshops.

Hello,

There have been a few e-mails exchanged on this topic and I have had a chance to talk with Alain and Steve as well. The common theme of all exchanges has been agreement in the need to revisit the goals of this workshop and then, consequently, reconsider the makeup of the working groups.

Before addressing the process of considering goals and working groups we should take care of a practical consideration. It is going to take time to reach consensus on the reconsidered workshop, however Van has to know fairly promptly if the Vietnamese Workshop is going to take place next year. A solution could be to agree to hold the Vietnam workshop next year and use the time, before plenary and parallel speakers need to be invited, to consider the goals and working group structure. This would allow us to have a first pass at modified structure and a consequent recommended optimal frequency going into the Vietnam meeting next year. Is this acceptable?

Taking into account the ideas expressed in e-mails and discussions, the goal that drove the foundation of these workshops, the close interaction of accelerator physicists with experimentalists and theorists, should still be a major goal of these meetings. The challenge seems to be how to adjust and maintain this goal in the face of community and economic shifts toward large experimental facility(ties) draining support for consideration of the field beyond these large projects. Instead of trying to address this with a committee of 26 voices, let's put together a smaller group representing oscillation and interaction experimentalists, accelerator physicists and

theorists that would be more efficient to reconsider the structure of the workshop keeping fundamental goals in mind. This group's considerations are then circulated to the entire SPC.

Please let me know your thoughts on these questions; Vietnam next year and a small group to reconsider the workshop structure.

From: Jorge G Morfin <morfin@fnal.gov>
Subject: Recommendations for Future NuFact Workshops
Date: December 4, 2015 at 8:48:32 AM CST

Dear SPC Members,

Please find attached an alternative set of recommendations regarding the future NuFact workshops for your consideration. This set, based on the draft circulated by Vittorio on 21 November, attempts to represent the thoughts of those of us on the SPC who consider the original goals of the series based on neutrinos from muon beams as important for the future of the field.

These recommendations also welcome and support the inclusion of the study of conventional neutrino beams to get the best physics possible from these facilities. However, to continue calling this series **NuFact** Workshops, the improvement in this "best physics" by using muon-based neutrino beams should be an obvious goal of the workshops.

Best regards,
Alan Bross, Ken Long, Jorge G. Morfin and Paul Soler

Recommendations for future NuFact Workshops

The NuFact Workshop series has proven once more, at Rio 2015, to be popular and lively. It has become home of **physics with accelerator neutrinos** not only in looking toward the future with neutrinos from accelerated muon beams but also in critically examining the experimental study of neutrino physics with conventional accelerator neutrino beams and understanding the limitations such beams bring to the physics analysis.

The proposal is that since the study of neutrino mixing is of great current interest NuFact will continue yearly and rotate regularly among three regions; Asia, Europe and the Americas. Although increasing local attendance in emerging countries is a major goal, targeting large labs and universities is also important

The organization of the INSS Neutrino School, associated with the NuFact workshop will be encouraged.

WG1 has become the opportunity where K2K, MINOS, OPERA, T2K, MINERVA, SHINE, NOVA as well as others, such as those interested in beam dumps searching for RH neutrinos can discuss their current and future prospects. With yearly advances in the field and including T2HK and DUNE considerations, this working group will be able to provide a regular reevaluation of how a neutrino factory neutrino beam could extend these future prospects.

WG2 looks at all neutrino nucleus interactions, with a good link to the dedicated NuInt Workshop, and focuses on oscillations. It is important to understand the limitations in this study due to conventional neutrino beams. The quantitative advantage of a neutrino factory beam in reducing systematics on oscillation measurements from this source will be continuously reevaluated.

WG3 has been most significantly affected by the recent shift in personnel and financial support away from muon-based neutrino beams. Advances in this direction will now require more time. For this reason, we propose that the focus of WG3 alternate yearly with the emphasis on neutrinos from muon beams one year and on conventional neutrino beams the next. This emphasis in alternate years on conventional neutrino beams could also provide a link to the broader accelerator neutrino community and to the technically dedicated Neutrino Beam Instrumentation NBI Workshop series. An extra convener from the team of the new FNAL line to S Dakota and/or the T2HK line is proposed.

The WG4 community remains symbiotic and welcome in the forms it will decide yearly.

WG5, concentrating on Neutrino Theory, has been advocated by E. Fernandez a former WG1 convener. He will be invited, along with other potential conveners, to make a proposal to initiate this WG if not in NuFact 2016 then for NuFact 2017.