






NF05 – Report on First Remote Mini-Workshop

Diana Parno for the NF05 Topical Conveners

10 July 2020

The Plan

Welcome and Introduction to Snowmass	<i>Diana Parno</i>  10:30 - 10:35
Colloquium on Direct Neutrino Mass: Probing to 0.2 eV	<i>Susanne Mertens</i>  10:35 - 11:05
Tritium prospects for going beyond 0.2 eV	<i>Brent VanDevender</i>  11:05 - 11:25
Holmium prospects for going beyond 0.2 eV	<i>Loredana Gastaldo</i>  11:25 - 11:45
Prospects for neutrino mass in other isotopes	<i>Angelo Nucciotti</i>  11:45 - 12:05
Spectral calculations for holmium	<i>Maurits W. Haverkort</i>  12:05 - 12:35
Group discussion	 12:35 - 13:05

- ◆ Focus on the next 5-10 years of direct neutrino-mass measurements
- ◆ International community (almost all Europe + US)
- ◆ Mostly nuclear physicists unfamiliar with Snowmass

Technical Details

- ◆ We set up a Stanford Zoom meeting (max participants: 500) with 2 co-hosts
 - ◆ not a webinar
- ◆ No registration
- ◆ Slides uploaded to indico
- ◆ Presenters shared screen and (when possible) video
- ◆ Q&A mostly through raised hands and comments in Snowmass slack
 - ◆ One co-convenor kept eye on slack to get questions to MC
- ◆ Recorded to cloud (auto-transcript enabled)
 - ◆ Started and stopped a new video for each speaker
 - ◆ Processing occurs only *after* meeting ended

How It Went

- ◆ About 75 people came
 - ◆ Many people do not already work in this area
 - ◆ Lively discussion, mostly involving ~5-10 people
- ◆ Talks were well received
- ◆ The talk portion went about 1 hour overtime, mostly due to questions and discussion.
- ◆ The “Group Discussion” was very short – people wanted to hear more about LOIs.
- ◆ There is popular demand for one speaker (Angelo Nucciotti) to write a paper based on his talk
- ◆ Discussion was mostly on 5-10-year time scale, and focused on individual experimental efforts rather than program

Discussion Topics

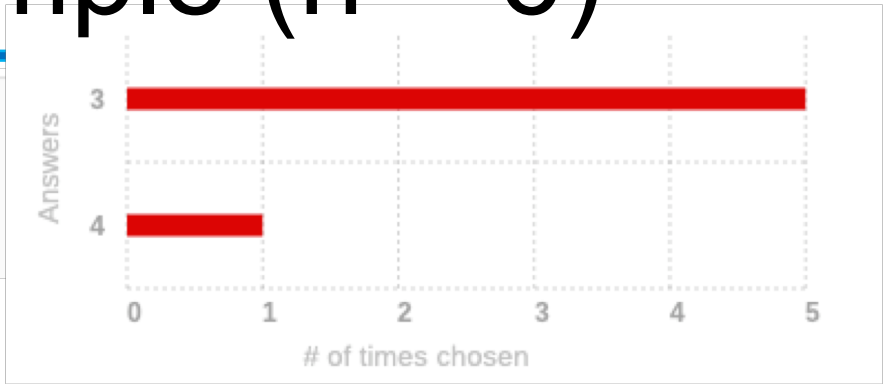
- ◆ How would the course of each experiment be affected by outside results (from other experiments, or from e.g. cosmology)?
- ◆ Numerical limitations of molecular tritium sources (to be calculated)
- ◆ Technical challenges for next phases of Project 8, ECHo and HoLMES
- ◆ Possible and impossible experimental designs for ^{115}In and ^{135}Cs neutrino-mass experiments
- ◆ Effect of environment on ^{163}Ho spectral shape
- ◆ Possible spectral calculations for PTOLEMY (T bound on C) and $^{83\text{m}}\text{Kr}$ calibration sources

- ◆ LOI ideas – possible experiments, measurements with non-standard isotopes, survey of direct neutrino-mass landscape, ...

A Very Small Statistical Sample (n ~ 6)

How informative was the workshop?

1 means you learned nothing new. 5 means that almost all of the information presented was new to you.

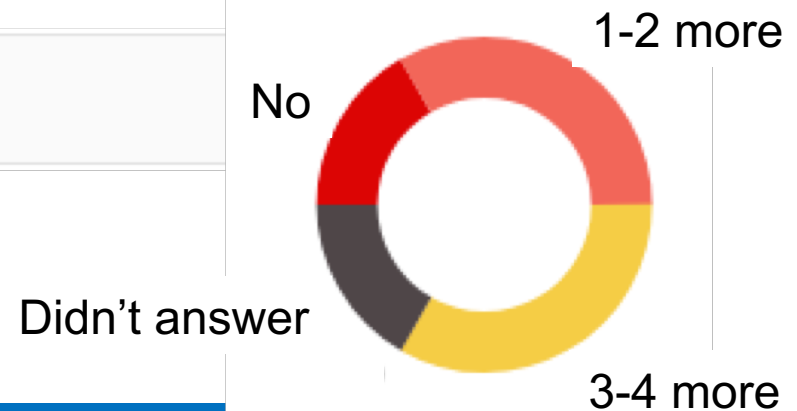


How productive were the discussions?

1 means that the discussions were not productive at all, in terms of exchanging views and information, and 5 means that they were extremely productive.



Do you plan to attend other mini-workshops in this series?



Lessons Learned

- ◆ Make time available before the session for speakers to test connections and screen-sharing
- ◆ Some participants will dial in early – host should log on early and share a slide saying when meeting will start
- ◆ Host will receive lots of random communications over Zoom chat, e.g.:
 - ◆ *Should I stay for discussion? How can I ask questions? Is the speaker's connection breaking up for anyone else? Please shut off video for another participant whose relative is getting dressed in the background.*
- ◆ Allow lots of time for discussion
- ◆ Have co-hosts in case host's Internet glitches
- ◆ Helpful to have slack back-channel with other co-conveners
- ◆ Speaker choice and instructions are crucial