

NuFact SPC meeting

Report from WG5

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Proposed names for the round table

- Tao Han - Theorist
- Giovanni De Lellis - OPERA spoke and SHIP
- Pilar Hernandez, - theorist
- Silvia Pascoli - theorist
- Andre de Gouvea - theorist
- Patrick Huber - Theorist
- Richard Jacobsson - SHIP

Plenary talks

- We propose 4 talks related exclusively to our WG program plus 2 “linked” to other two WG’s, that should be discussed/agreed/merged with talks related to other WG’s
- The talks are listed in order of priority from a) to f)
- We also made a list of possible candidate speakers that in our opinion should be contacted in the given order for availability.

Plenary

- Global Fits for 3+1 Scheme and NSIs (common topic with WG1) (covering both theory and experiments)
Speakers: 1) Michele Maltoni, 2) Thomas Schwetz, 3) Concha Gonzalez Garcia, 4) Tommy Ohlsson
- Majorana Neutrino Searches at MeV to TeV (collider searches, meson decays, etc...)
Speakers: 1) Tao Han, 2) Apostolos Pilaftsis, 3) Francisco del Aguila, 4) Frank F. Deppisch, 5) Silvia Pascoli
- Recent developments on the keV Sterile Neutrino Dark Matter (theory and experiments)
Speakers: 1) Alexey Boyarsky, 2) Oleg Rucharsky, 3) Kevork N. Abazajian, 4) Marco Drewes

Plenary

- Searches for Light Dark Sector Particles at Neutrino Experiments (Dark Photons, Z-prime, Light Dark matter, MiniBooNE beam dump...etc...)
Speakers: 1) Maxim Pospelov, 2) Brian Batell, 3) Bogdan Dobrescu
- Standard and Non-Standard Neutrino Properties in Cosmology (neutrino mass, species, self interactions, secret interactions, new physics..etc)
Speakers: 1) Joachim Kopp, 2) Sergio Pastor, 3) Alexander Friedland, 4) Olga Mena, 5) Steen Hannestad
- Accelerator Studies for FCC and SHIP (common topic with WG3)
Speakers: 1) Brennan Goddard, 2) Richard Jacobsson

Parallel sessions

We have a total of approx. 15h to fill with parallel session talks. Assuming 30 min per talk, this is 30 talks.

Following the draft of the agenda from the last SPC meeting, we have FIVE sessions of 1.5h (3 talks per session), plus FOUR sessions of 2.5h (5 talks). This amounts to 35 talks. We are assuming for now that we have less time:

- FIVE sessions of 1.5h -> 3 talks per session, 15 talks in total
- THREE sessions of 2.5h -> 5 talks per session, 15 talks in total

Joint parallel sessions

- Joint session with WG1 on sterile neutrinos (2.5h)
 - sterile neutrinos and the Fermilab Short baseline neutrino program (experimental talk)
 - effects of sterile neutrinos at long-baselines (theoretical/pheno)
 - reactor SBL (experimental)
 - non-unitarity of the PMNS matrix (theory/pheno)
 - sterile neutrino searches at icecube (pheno)
- - Joint session with WG2 on NSI (+WG4?) (1.5h)

Joint parallel sessions

- bounds on NSI from scattering experiments (experimental)
- NSI at reactor and short-baseline experiments (pheno)
- charged lepton flavor violation and NSI (theory)
 - ... (an alternative idea for a joint session with WG2 would be heavy neutrino searches at neutrino scattering experiments, such as NuTeV, CHARM, etc)
- Joint session with WG3 on Heavy neutrino searches (1.5h)
 - ... (a theory talk here, for motivation of these searches: nuMSM?)
 - SHiP beam developments (experimental)
 - ShiP and DUNE physics sensitivities (experimental/pheno)

Parallel sessions of WG5

- Session of 2.5h on Heavy neutrino searches
 - meson decay searches
 - 3.5 keV line (maybe one astro-talk and one of searches in lab)
 - minimal seesaw models? inverse see saw?
 - neutrinos in colliders
 - ...
- Session of 2.5h on Non-Standard Interactions in propagation
 - NSI at T2K and NOvA
 - NSI at atmospheric neutrino experiments
 - Theoretical constraints and viable models on NSI
 - NSI at DUNE
 - ...

Parallel sessions of WG5

- Session of 1.5h on Neutrinoless double beta decay:
 - neutrinoless and steriles (pheno)
 - experimental prospects (experimental)
 - ... combination with other measurements (cosmology, beta decay, etc)

- Session of 1.5h on Flavor models
 - ...
 - ...
 - ...

- Session of 1.5h on "Other New Physics"
 - trident searches at DUNE
 - large extra dimension searches
 - neutrino decay