Detector WG @ NuFact

• NuFact is the preeminent meeting to discuss new accelerator-based neutrino sources and projects
  • This has changed a bit in recent years with NuFact taking a broader focus on neutrino physics
• The next round of accelerator-based ν beams is already well defined
  • LBNF to DUNE
  • Upgrade path at JPARC to HyperK (now approved)
  • HL-LHC, SuperKEK-b (for RH neutrino searches)
• Moving beyond them will likely be 15-20 years from now
• What is happening now is a tremendous effort on neutrino detectors, simulation and analysis techniques, both far and near detectors
  • How do we best capture this in NuFact?
• ! The main goal is to increase NUFACT attendance, not to share same attendance over more working groups !
• Also to make detector experts part of NUFACT community
WG1: Neutrino Oscillations
   Adam Aurisano  
   Jian Tang     
   Neil McCauley

WG2: Neutrino Scattering Physics
   Adi Ashkenzi 
   Natalie Jachowicz 
   Tatsuya Kikawa

WG3: Accelerator Physics
   Mohammad Eshraqi 
   Tsunayuki Matsubara 
   Robert Zwaska

WG4: Muon Physics
   Yuki Fujii  
   Frederik Wauters 
   Yuri Oksuzian

WG5: Neutrinos beyond PMNS
   Carsten Rott 
   Richard Ruiz 
   Ian Shoemaker

WG6: Detectors
   Davide Sgalaberna 
   Nishimura Yasuhiro 
   Jonathan Asaadi

University of Cincinnati, USA
Sun Yat-Sen University, China
University of Liverpool, UK
MIT, USA
Ghent University, Belgium
Kyoto University, Japan
ESS, Sweden
J-PARC/KEK
FNAL, USA
Monash University, Australia
University of Mainz, Germany
ANL, USA
Sungkyunkwan University, Korea
UC Louvain, Belgium
Virginia Tech., USA
CERN, Switzerland
Keio University, Japan
University of Texas, USA
The typical number of hours of talks in the NUFACT meeting is 6h per day x 4.5 days = 27
half is WG meetings, half is plenary, thus we end up with ~8 sessions of 1.5 hours for each WG i.e.
about 25-30 talks. (plus one session to prepare the final conclusions)

it is useful to foresee ~ two or three joint sessions with
WG1 (PMNS oscillations),
WG2(x-sec) ,
WG5(Beyond PMNS)

Quite a bit of freedom for WG6: Foreseen detectors and progress, as well as possible detectors technologies
Detector WG @ NuFact

• Topics:
  • LAr, both conventional and pixelated
  • WC, pure and Gd loaded
  • water-based Scintillator
  • Magnetic spectrometers
    • ND280 (TPC, baby-MIND)
    • DUNE near-detector complex
  • Totally-active targets
    • Both non-magnetized and magnetized
  • Movable detectors e.g. PRISM (Precision Reaction Independent Spectrum Measurement) concept
    • Both DUNE and HyperK are pursuing this concept
  • Detectors for coherent scattering
  • Trigger, DAQ, reconstruction and calibration techniques
  • Acillary calibration experiments and detectors (NUSTORM, ENUBET)
  • NB there will be a dedicated joined session on (NUSTORM, ENUBET) sunday before NUFACT2020 in Calgari
  • **Not to forget:** detectors and special set-ups (triggers!) for heavy neutrino detection at accelerators SHIP/Mathusla/FASER; BELLE-II, HL-LHC, FCCee/hh/eh (coordination with WG5)
Detector WG @ NuFact

• Proposal:
  • Find conveners *DONE*
  Jonathan Asaadi (Uni Texas), Yasuhiro Nishimura (Keio U.)
  Davide Sgalaberna (CERN)
  • Conveners with the help of the SPC develops in more detail the concept for the WG and solicits input/interest from the community
  • Assemble agenda based on response
    • Dedicated sessions; and some joint sessions with WG1, WG2, WG4, WG5, Mix will depend on response and the work of the Conveners