The NUFACT 2021 round table discussion

The theme of the round table was decided in 2020 (before the COVID pandemic or the European Strategy release)

On the way to DUNE and HyperK

How do we organize the co-existence for the best of the field?

Status and issues for both experiments will have been given in presentations at the workshop.

Joint projects related to

- **beamline technology, hadroproduction measurements**
- **cross-section systematics and how to tackle them?**
- **Nustorm and ENUBET**
- **PMNS analysis and beyond, joined preparations for it**

Maximizing the complementarity?

The panel

DUNE spokesperson (Stefan Soldner-Rembold, Manchester University)

HyperK spokesperson (Francesca Di Lodovico, King's College London)

Hadronic and neutrino cross-sections (Jon Paley, Fermilab) EMPHATIC spokesperson and NUSTEC co-spokesperson

Near detector specialist in T2K DUNE, HyperK (Sara Bolognesi, CEA)

ENUBET and nuSTORM (Ken Long, Imperial College & STFC)

Long time neutrino oscillation specialist and NUFACT wise person (Takashi Kobayashi, Director of J-PARC center)

More information on panelists in last page

Questions following the theme

How do we organize the co-existence for the best of the field?

-- cooperation on beam line technology (Kobayashi-san starts, others at lib)
International collaboration

-- flux measurements and hadroproduction (Jon Paley starts, others ad lib)
are the experiments sufficiently supported?
do we really need both NA61 and EMPHATIC?
complementarity?

-- cross-section systematics and how to tackle them? (Sara Bolognesi starts, others at lib)
-- do we know what systematics are most important?
-- what level of precision are DUNE and HyperK sensitive to -- and require?
-- near detector designs (will this be enough? collaboration useful?)
-- ancillary measurements -- what and which is most needed?

-- ENUBET and NUSTORM (Ken Long starts, others at lib)
-- how would they address the above requirements (are they needed?)
-- collaboration?

-- PMNS and beyond (Francesca & Stefan start, others at lib)
-- joined preparations of fits?
-- any possibility to optimize the complementarity?
-- any comments on T. Schwetz 'model independent CP measurement'?

More information on the panelists

Sara Bolognesi recent link

- CMS physicists involved in CMS commissioning and Higgs search from 2003 to 2013
  (Torino University and INFN, then CERN fellow and postdoc at Johns Hopkins University)
- Moved to neutrino physics in T2K in 2013 until now.
  -- Near Detector physics to tackle nuclear uncertainties in Neutrino-nucleus interaction
  -- Evaluation of nuclear systematics in neutrino oscillation and now T2K analysis coordinator since 2020

Francesca Di Lodovico recent link

co-spokesperson of the Hyper-Kamiokande experiment. She is also a member of T2K and Super-Kamiokande.
Her previous experience is on B-Factories with BaBar and before at LEP-II on the search for the Higgs boson(s).

Stefan Soldner-Rambold recent link

Professor at the University of Manchester and has been Spokesperson of the DUNE Collaboration since 2018. He is also a member of the MicroBooNE, SBND, and SuperNEMO Collaborations. He graduated from the University of Bonn in 1987 and received his doctorate from the Technical University of Munich in 1992, working at the Max Planck Institute and on the Fermilab fixed target programme. He worked at the University of Freiburg from 1992 to 1999, where he received his Habilitation in 1996. He held a Heisenberg Fellowship of the German Research Foundation from 1999 to 2003 and joined the faculty of the University of Manchester in 2003, where he is now Head of Department. He was Spokesperson of the DØ Collaboration at the Tevatron from 2009 to 2011 and served as Physics Coordinator of the DØ Collaboration and of the OPAL Collaboration at LEP. He is a fellow of the American Physical Society and of the Institute of Physics (IoP), and he received a Royal Society Wolfson Research Award in 2013 and the IoP's Chadwick Medal and Prize in 2018.

Jonathan Paley recent link

One of the conveners of the NOvA Near-Detector Cross Section Group. He's also co-spokesperson for the EMPHATIC collaboration, and he works on beamline instrumentation and alignment for the Long-Baseline Neutrino Facility. He was recently elected co-spokesperson for the NUSTEC collaboration

Kenneth Long recent link

HERA, MICE (UK leader since 2001, Spokesperson since 2014) and Neutrino Factory (ISS 2005-09, IDS 2009-14), NuSTORM, Muon collider, ICfA neutrino panel, accelerator research

Takashi Kobayashi recent link

Kobayashi-san was at the origin of the T2K experiment (off-axis) set-up, T2K spokesperosn, then KEK IPNS director and now J-Parc Director. Many prizes including Suwa prize for the T2K neutrino beam, Totsuka prize, Nishina Prize , Breakthrough Prize with T2K collaboration and more.
Chair of NUFACT2016.