WG3 Introduction: Accelerator

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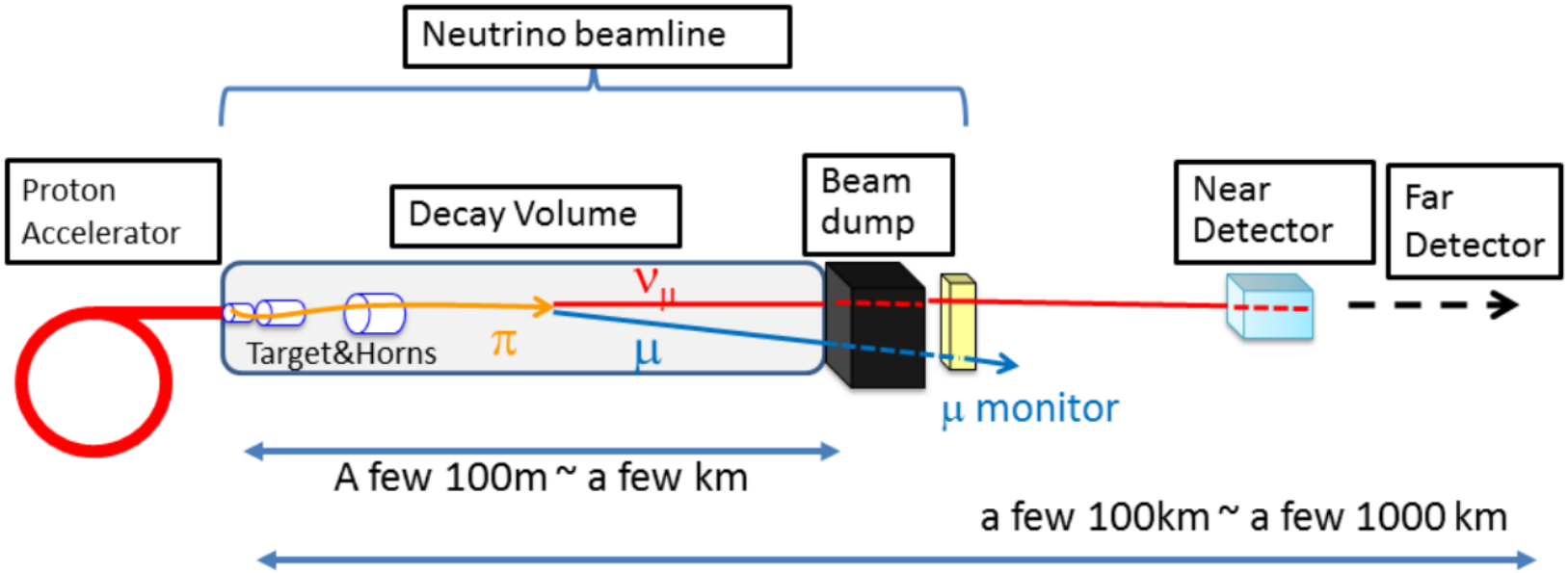
A Few Comments..

- Accelerators are necessary for the physics we want to do
- Future improvements/ideas/facilities are necessary to continue improving our results

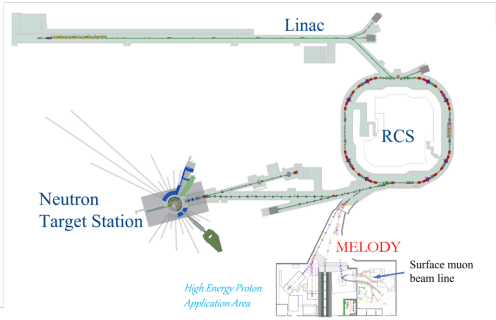
Accelerators for Neutrino Experiments

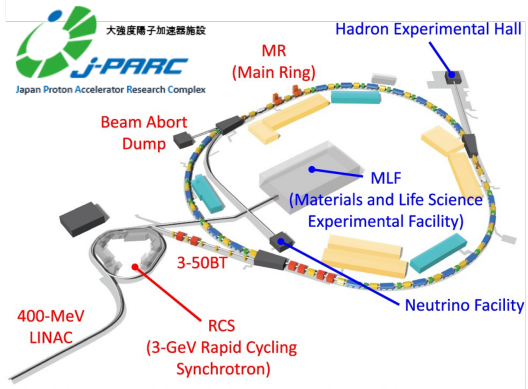


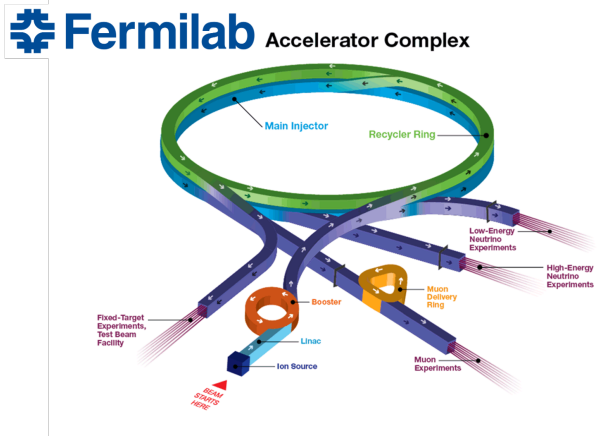
- Conventional current and near-future world-class neutrino beams require:
  - High-intensity proton beam
    - Manipulation of high-power beam
    - Commissioning towards stable operation
  - Radiation-hard equipment
    - Targetry, monitoring
  - Proper understanding of beamline/modeling
  - Synnergies between neutrino and muon beamlines

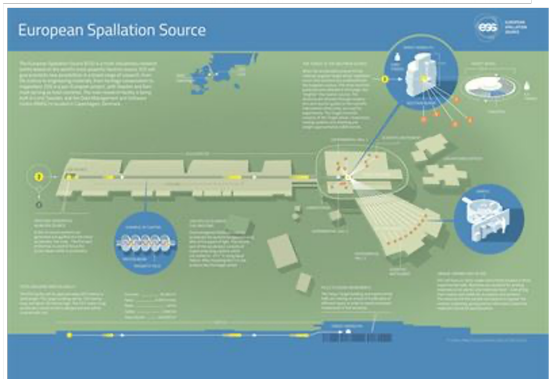
WG3 Plenary Talks – Tues. 11:00 Session

- Status and future plans of accelerator facilities around the world
- Four invited plenary talks:
- Beam power upgrade status and plan at J-PARC – first operation after major upgrades
- Proton beam upgrade plan at Fermilab – major future upgrades planned
- Status of beam commissioning at ESS – new machine ramping up
- New suggestion from China for the new muon beam-line building plan – new muon facility at CSNS (WG3xWG4)

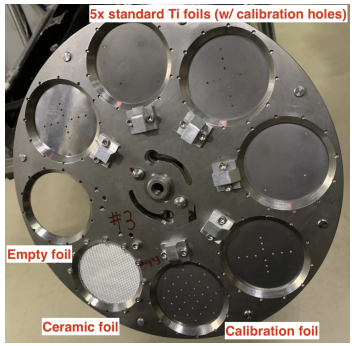






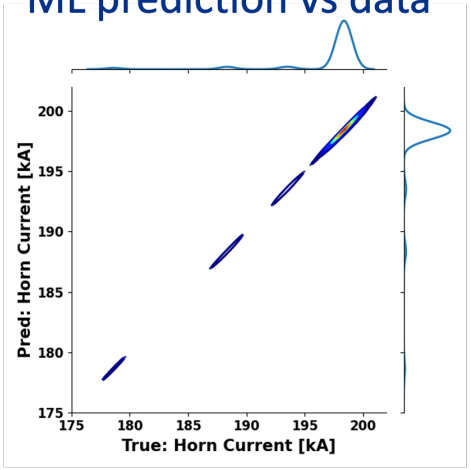


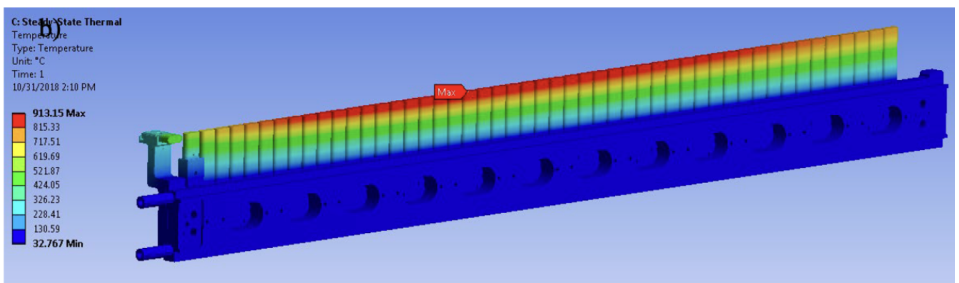
WG3 Parallel Session – Tues. 14:00



- Neutrino beamline commissioning
  - Beam scan data from J-PARC and FNAL
- Radiation tolerant instrumentation
  - Proton, muon monitoring
  - High-power targetry + material development

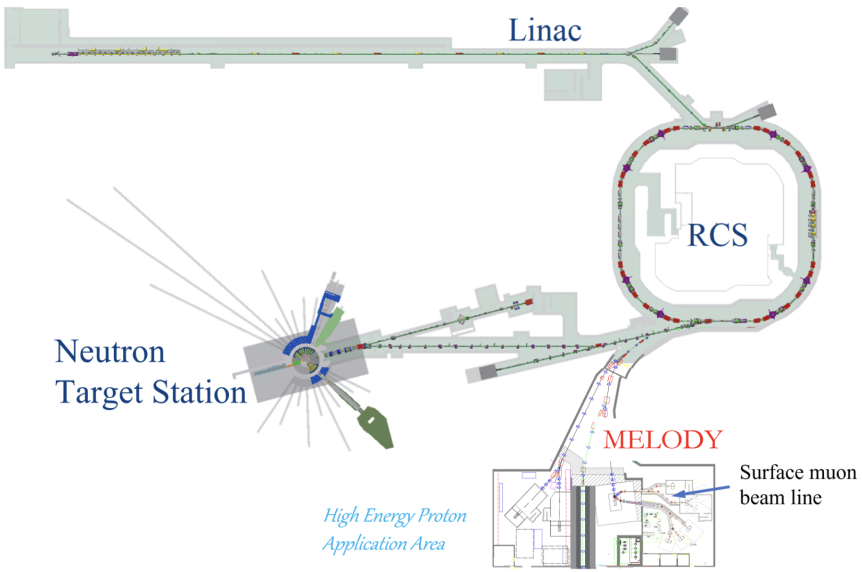
ML prediction vs data

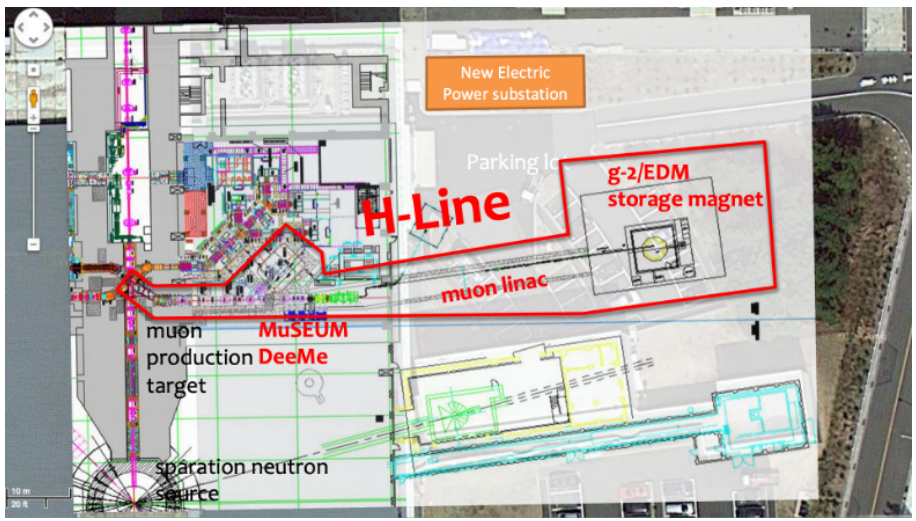




WG3x4 Joint Parallel Session – Tues. 16:30

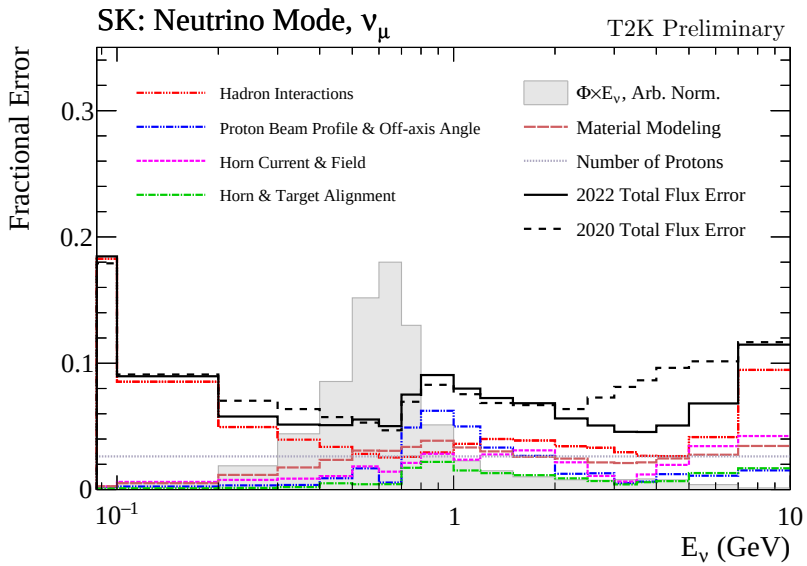
- Accelerators for muon beams
- Status of current beams and ideas for near- and far-future beams

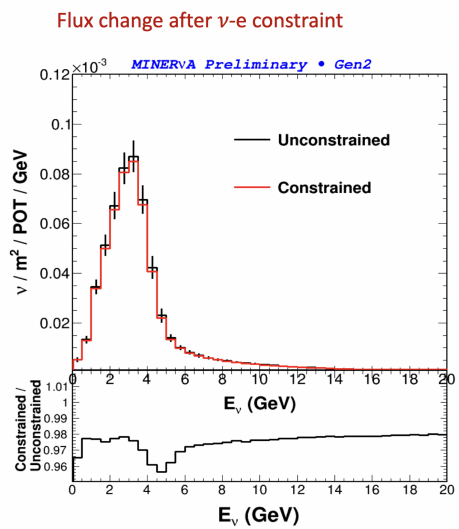


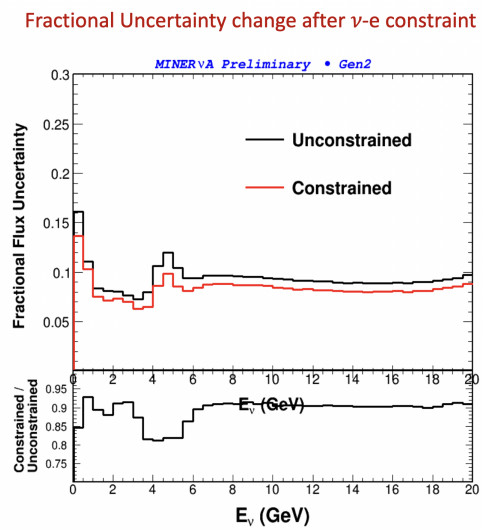


WG1x3 Joint Parallel Session – Fri. 8:30

- Joint session between accelerator + physics working groups:
  - Neutrino fluxes and flux errors
    - T2K, NuMI flux at ICARUS
  - Constraining neutrino fluxes using novel techniques
    - Neutrino tagging at NA62, nu-e scattering at NOvA, horn focusing

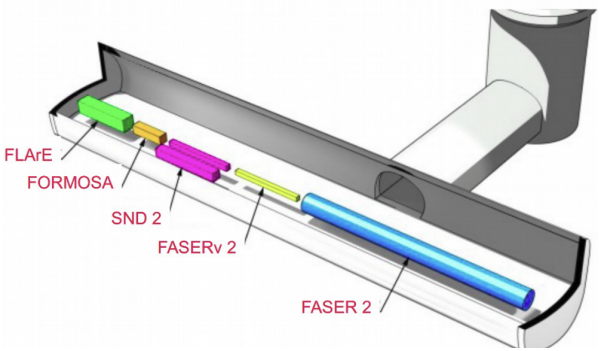


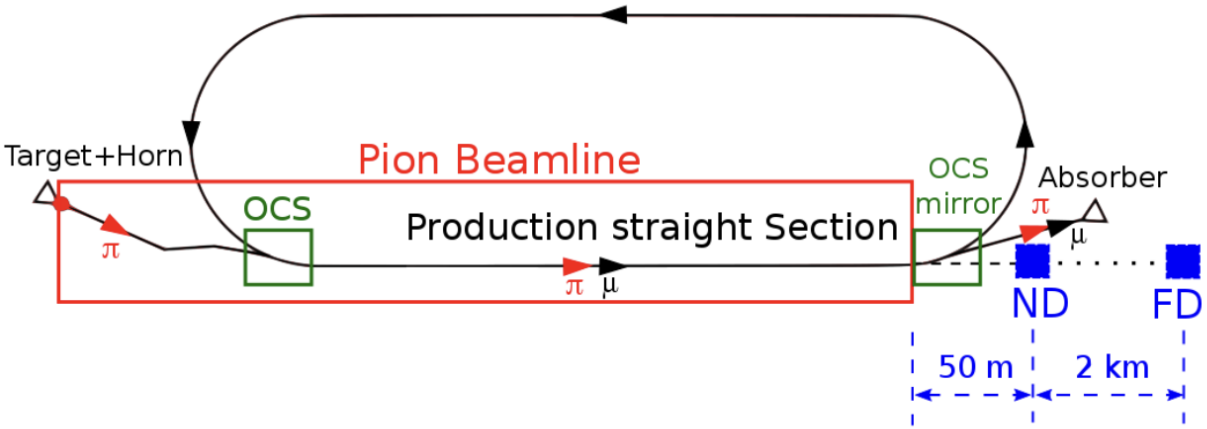




WG3 Parallel Session – Fri. 11:00

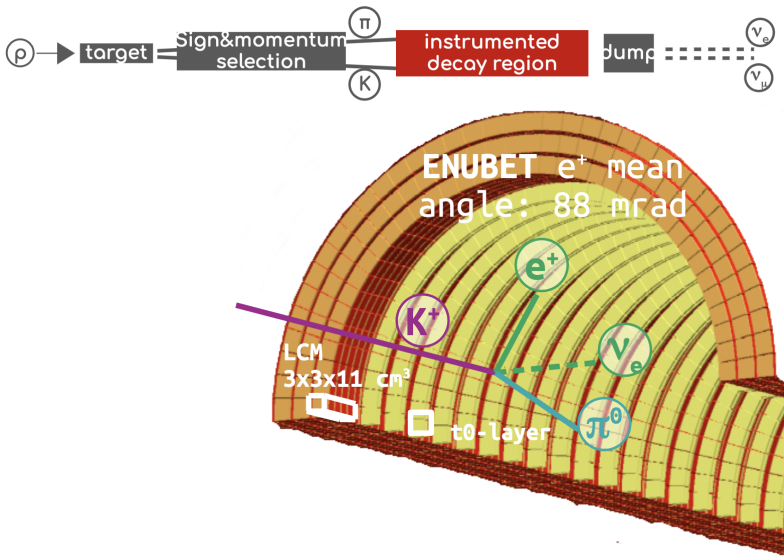
- Accelerator commissioning – post-upgrade at J-PARC
- Future facilities – NuSTORM, FLArE
- Accelerator programs in Korea

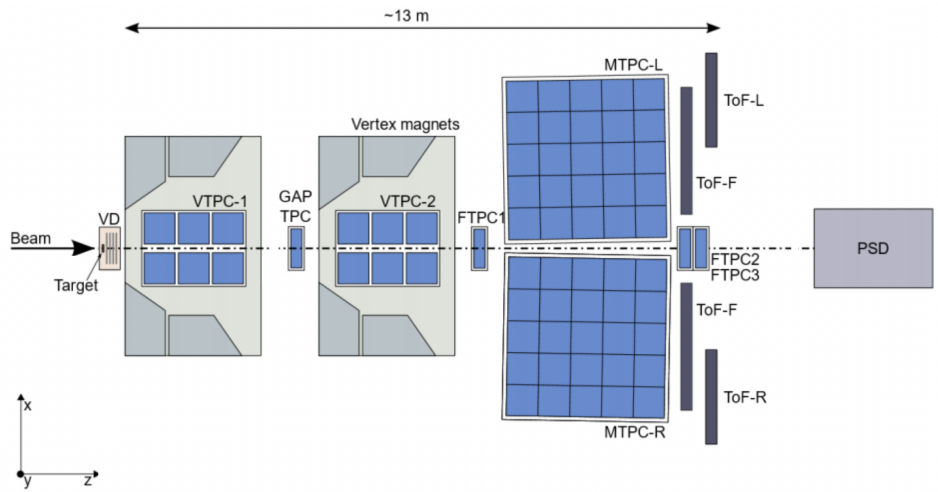




WG3 Parallel Session – Fri. 14:00

- More novel ways to constrain fluxes
  - Monitored neutrino beam (ENUBET)
  - Time-slicing fluxes
  - Hadron production measurements (NA61/SHINE)
- Exotics – light sterile neutrinos at KM3NeT





WG3 Agenda

DAY 2 AUG.22 TUESDAY	Plenary 4 1100 - 1240 Moses Chung	25	wg3 Beam power upgrade status and plan at J-PARC	Takeshi Nakadaira
		25	wg3 Proton beam upgrade plan at Fermilab	Jeff Eldred
		25	wg3 Status of beam commissioning at ESS	Andreas Jansson
		25	wg3x4 New suggestion from China for the new muon beam-ling building plan	Nikolaos Vassilopoulos

		minutes	title	speaker
DAY 2 AUG.22 TUESDAY	Parallel 1 1400 - 1600 (120 min) Natalia Milas	20	First commissioning data from the upgraded T2K beamline	Yukine Sato (Tokyo Univer
		20	The T2K optical transition radiation proton beam monitor: updates and future plans	Charlie Naseby
		20	Uniform beam simulation technique for NuMI beam scans and ML studies at Fermilab	Don Athula Wickremasinghe
		20	Advanced Material Development for Next Generation Accelerators	Gaurav Arora
		20	High-Power Targetry R&D for Next-Generation Accelerator Facilities	Gaurav Arora
	Parallel 2 1630 - 1830 (120 min) Yoshi Uchida	20	High purity and high brightness muon beam for next generation muon-electron conversion experiments	Akira Sato
		20	Update on the targetry and bealines of MELODY	Nikolaos Vassilopoulos
		20	High - Intensity Muon Beams (HIMB) project or how to improve the most intense continuous muon source in the world (abs #26)	Giovanni Dal Maso
		20	Status of the ultra-slow muon beamline at J-PARC MUSE (abs #120)	Sohtaro Kanda
		20	Progress in design of a muon source for muon to electron conversion based on an FFA ring - PRISM (abs #174)	Jaroslaw Pasternak
DAY 5 AUG.25 FRIDAY	Parallel 3 0830 - 1030 (120 min) Natalia Milas	20+4	Experimental proof of principle of the Neutrino Tagging technique at NA62	Bianca De Martino (Centre National de la Recherche Scientifique (FR))
		20+4	T2K flux prediction and tuning	Paul Soler Jermyn (University of Glasgow (GB))
		20+4	Status of the Measurement of Neutrinos Elastically Scattering Off Electrons in the NOvA Near Detector	Yiwen Xiao
		20+4	Exploring the focusing mechanism of the horn magnets of the Fermilab main injector facility	Don Athula Wickremasinghe, Katsuya Yonehara
		20+4	The NuMI Flux at ICARUS	Daniel David Cherdack
	Parallel 4 1100 - 1230 (90 min) Megan Friend	15+3	J-PARC MR Upgrade Commissioning Status and Future Plan	Takaaki Yasui
		15+3	nuSTORM; Neutrinos from Stored Muons	Kenneth Richard Long
		15+3	The Forward Liquid Argon Experiment at the Forward Physics Facility for High Energy Neutrino and Dark Matter Searches at LHC	Jianming Bian
		15+3	Overview of Accelerator Programs in Korea and Their Potential Contributions to Neutrino/Muon Physics	Moses Chung
	1230 - 1400			
	Parallel 5 1400 - 1600 (120 min) Katsuya Yonehara	20	A monitored neutrino beam for high precision cross section measurements: the ENUBET experiment at CERN	Andrea Longhin
		20	Time Slicing of Neutrino Fluxes in Oscillation Experiments at Fermilab	Sudeshna Ganguly
		20	Impact of of light sterile neutrino at the long-baseline experiment options at KM3NeT	Rudra Majhi
		20	NA61/SHINE experiment for neutrino physics	Yasuke Koshio

Conclusion

Please enjoy talks about accelerator physics!